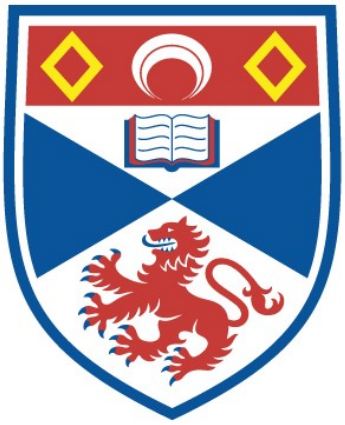
JOHN ADAMSON 1810-1870
AND
EARLY PHOTOGRAPHY AT ST ANDREWS

Bruce F. Pert

A Thesis Submitted for the Degree of MPhil
at the
University of St Andrews



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"The sun will thus become the historiographer of the future, and in the fidelity of his pencil and the accuracy of his chronicle, truth itself will be embalmed and history cease to be fabulous."

Sir David Brewster

(History of the Stereoscope 1856)

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C O N T E N T S

SUMMARY

John Adamson (1809-1870) was the eldest of 10 children born to Rachel and Alexander Adamson, tenant of Burnside Farm near Boarhills, a few miles east of St. Andrews. If photography had never been invented Adamson would still have been a figure of more than passing interest. His medical studies in Edinburgh took place against a background of Knox the Anatomist and the Burke and Hare scandal. His student contemporaries included James Y. Simpson and Charles Darwin; he studied in Paris around the time of the July revolution; he was a ship's surgeon on a voyage to China; he helped establish the Literary and Philosophical Society's Museum and remained its curator from its beginning in 1838 until his death in 1870. His obituaries are testimony to his dedication to medicine and his papers on sanitation are a similar tribute to his commitment towards public health.

Within weeks of Talbot's discovery of Photogenic Drawing, photography was on the Agenda of the Literary and Philosophical Society in St. Andrews. Talbot's friendship with Sir David Brewster gave St. Andrews a major part to play in the early history of photography with John Adamson taking a leading role.

Whether medicine or photography was Adamson's major interest is a moot point but one feels very much that Adamson was a doctor first and foremost and for this reason it seemed appropriate to discuss at some length his medical career. He was also a man of passionate interests however,

including chemistry and natural history and it would have been surprising had he not found photography an irresistible challenge.

In looking at Adamson's photographic career the main source has been the Minute Book of the Literary and Philosophical Society which, where appropriate, has been linked to photographic developments elsewhere. Photographic references from this volume are produced in Appendix 1.

Overall, it is hoped that this dissertation may serve to place John Adamson in a clearer context with regard to both his medical and photographic career.

INTRODUCTION

A BRIEF HISTORY

It is by no means easy to ascribe the invention of photography to a single individual. By the 19th century the various components of the photographic process were already in place, some of them had been so for centuries. The principles of the camera obscura had been observed by Aristotle in the 5th century B.C., described (amongst others) by Leonardo da Vinci in his notebooks* and brought to the attention of painters as a potential optical aid by the Neopolitan Giovanni Battista della Porta in 1558.**

The light sensitivity of silver salts had been noted as early as the 13th century by Albertus Magnus and by 1727 Professor J. Schulze had established that it was the action of light, not heat, which promoted the darkening of the salt solution.*** Others working in the field were reaching similar conclusions at around the same time but there was as yet no sense of a "race" since an end product for all this research had not yet been defined. These early observations on photo-chemistry were to provide a solid foundation upon which future researchers would build. By 1800 Thomas Wedgwood, the son of Josiah, the famous potter,

* The Notebooks of Leonardo da Vinci ed. I.A. Richter, Oxford 1980, p115

** J.C. Lemagny & A. Roule, A History of Photography, New York, 1986, pp12 & 13

*** R.B. Litchfield, Tom Wedgwood, The First Photographer, London 1903, pp217-240

was creating images by placing solid objects such as leaves in contact with sensitised leather and allowing the direct action of sunlight to darken the area beyond the leaf leaving an image of its outline. These images were highly unstable however, and had to be stored in darkness where they could only be viewed by candlelight.*

The problems of "capturing" an image from nature might be summarised by the following requirements.

(1) A mechanical/optical means to isolate the selected image.

(2) A chemical means of preserving the image obtained.

(3) A chemical means of rendering the image stable and not subject to any further change when exposed to daylight.

The first to unite all three factors with any degree of success was a Frenchman, Nicéphore Niépce (1765-1833) in 1826 and the resultant image, a view taken from his window, is still in existence and probably the earliest surviving photographic artifact. Niépce embarked on a rather short lived partnership with a Parisian artist (of sorts), Louis Daguerre who used camera obscura images to produce large scale paintings for use in the theatre where the public paid to see dioramas of far off and exotic places. Daguerre, while not a trained scientist, was enough of an enthusiastic amateur to experiment and a major breakthrough occurred in 1837 when he discovered that latent images held in an iodised layer of silver on a polished copper plate could be

* R.B. Litchfield, Ibid

revealed and intensified by holding it over fumes from heated mercury, and stabilised or fixed by removing the unexposed silver iodide in a hot salt solution. This process was capable of producing images of astonishing clarity. At the same time in England, William Henry Fox Talbot, a gentleman scientist, had been experimenting in producing images on sheets of sensitised writing paper in much the same way as Wedgwood had with pieces of leather. Talbot however, made the simple but infinitely important observation in his notebook (February 1835) that the first image, with tones reversed, might be used to produce a second image which would restore the same tonality as the original by simply contact printing them together. Talbot called these images "Photogenic drawings". This simple idea marked the naissance of the modern photographic process but the Daguerreotype was to hold out for many years against this new process.

Technically though, the Daguerreotype was virtually incapable of further refinement whereas the negative/positive process opened up whole new areas of technical challenge.

Talbot, however, had other interests to pursue and he did not immediately build upon this work. In January 1839 however, he was spurred into action by the public announcement of Daguerre's discoveries and he immediately arranged an exhibition of his photogenic drawings in order to establish his prior claim. Of course, the two processes were fundamentally different but Talbot had no way of knowing this since no technical details had been published.

His work was exhibited at the Royal Institution in London on 25th January, 1839.

The photogenic drawing process however, had many drawbacks. Compared to a Daguerreotype, the image was weak and poorly resolved and in-camera exposure times could amount to several hours in inadequate light, rendering it totally unsuitable for portraiture. The fibrous texture of the paper in which the image was held was also apparent in the finished print. By September 1840 Talbot had refined his process through a number of technical improvements so that a much stronger image could be obtained in much shorter time. He gave this new, or revised process the name "Calotype" which he derived from the Greek for beauty calos and the Latin for image typus, hence "beautiful image" although in deference to its creator it was widely known as the "Talbotype". In February 1841 Talbot took out a patent for his new process which, in the event, was to somewhat retard its progress since its use was restricted to those who had applied for licenses to use the process. The Daguerreotype process had been given freely to the world (except in England where a patent had been taken out).

It should be stated that "Free" was a relative term since Daguerre was awarded an annual pension of 6000 francs per year for life prompting a correspondent in the Leeds Times to ask "How long will it be before a British Parliament manifests such promptitude in rewarding the labours of scientific men"(1).

In February 1841 Brewster had written to Talbot that "I am glad you have taken out a patent. To extend it to

Scotland would be unprofitable" (Brewster-Talbot Correspondence 4/2/1841 N.M.P.F.T. 1937-4870). Whether this reprieve by Talbot of his patent was due to Brewster's persuasion or whether he genuinely thought it would be "unprofitable" is difficult to say, but the ramifications of this action were to have far reaching and fortuitous consequences.

Indeed it is impossible to overemphasise the importance of this point. Had Talbot taken out a patent in Scotland and policed it with the same enthusiasm that he exerted south of the border, it is highly unlikely that early photography in Scotland would have flourished to the extent it did. Adamson and the others had complete freedom to experiment with the calotype process without fear or hindrance from any possible problems that may have ensured from any infringement or misinterpretation of the patent.

N.B. There is a substantial bibliography on the pre-history and general history of photography but the following are among the more useful.

B. Coe, The Birth of Photography, London 1976

B. Coe, A Guide to Early Photographic Processes, London 1983

J.M. Eder, History of Photography, New York 1945

H. Gernsheim, A Concise History of Photography, London 1986

H. Gernsheim, The Origins of Photography, New York 1981

M. Langford, The Story of Photography, London 1980

J.C. Lemagny & A. Roule, A History of Photography, New York 1986

B. Newhall, The History of Photography, New York 1982

ADAMSON IN EDINBURGH 1826-1829

When Adamson decided to study Medicine in 1826, the nearest centre to do so was Edinburgh. Although the 1412 foundation charter of the University listed Divine and Human Law, Medicine and the Liberal Arts and Sciences (2) there was still no School of Medicine at St. Andrews (and would not be until 1894).

Although John Knox in his First Book of Discipline had proposed that St. Andrews be the Centre for Medical Teaching in Scotland nothing became of this, even though the proposals were re-iterated later in the century by the Protestant Reformer and Principal of St. Leonard's College (St. Andrews), George Buchanan (1506-1582). One writer argues that it was just as well these proposals were not implemented as "a St. Andrews Medical School would have been a theoretical teaching establishment like Oxford since no hospital existed nearby and it would have held back or prevented Edinburgh and Glasgow's development as Medical Schools" (3). This is not entirely convincing, since firstly, the emphasis on the primacy of clinical material for teaching was not an absolute requirement at that period and secondly, if it had been, there were a number of establishments in St. Andrews which could have been used for that purpose (4).

However, it was undoubtedly true that with the passing of the years, the lack of a large hospital would have been a serious hindrance to medical practice. This argument appears again in 1720 when the Duke of Chandos wanted to endow a University Chair. The proposal for a Chair of Medicine was opposed by Dr Stuart who favoured a Chair of Literature. In a letter to the Duke, Stuart wrote "I cannot see of what use a Professor of Medicine would be at St. Andrews where an anatomist may be 10 years in looking for a body to dissect" (5). After much discussion the pro-medicine lobby prevailed and in January 1722, Dr Thomas Simpson became the first holder of the Chandos Chair of Medicine. Facilities and opportunities however were rather restricted compared to Edinburgh with its colleges of surgeons and physicians and by 1726, the Chandos Chair seemed to have been somewhat of a pyrrhic victory for its champions.

There had, at various times since, been attempts to establish regular medical teaching but they seem to have been met with a large degree of indifference. The "Medical Calendar of 1828 states that the Professor of Medicine had "attempted some years ago to establish a course of medical education ..... but not meeting with sufficient encouragement he relinquished the plan" (6). In his evidence to the University Commission (1826-1830), Dr Briggs, the Professor of Anatomy and Medicine (who, in point of fact taught neither of these subjects) tells of an attempt to begin a class of Pharmacy and Materia-Medica (in modern terms, pharmacology and therapeutics) but presumably

less than eight applied since he was willing to run a class for that number (7). Similarly, he had attempted to teach anatomy, but only one student turned up. The Calendar however does claim that although there is no Medical School at St. Andrews there is a six month winter course of pharmacy and chemistry which makes St. Andrews an "excellent and cheap school for the preliminary education which shall precede the study of medicine" (8).

There is no evidence however which suggests that Adamson availed himself of this opportunity and the autumn of 1826 found him matriculating for the beginning of the November term at Edinburgh University as student number 861 (9).

Universities were described by one author as "the breeding ground of the Scottish Enlightenment"* and medicine was one of the beneficiaries of this flowering of scientific and intellectual enquiry. Those returning from the "Grand Tour" or "European Experience" brought with them new ideas and thought from the continent. As well as elite tourists and artists, professional men also went abroad to widen their experience, including medical men like Alexander Monro (primus) and Francis Home, who studied at Leyden under the celebrated physician Herman Boerhaave before returning home to Edinburgh. Inevitably, much of the intellectual activity centred on Edinburgh, the "Athens of the North" and indeed it was to remain a dominant centre of excellence until the opening of the University College of London was chartered in

* O.D. Edwards, Burke and Hare, Edinburgh 1993, p117

1836 (although this institution was founded and largely staffed by Scotsmen*). The early years of medicine in Edinburgh and the philosophical and cultural background to this period are discussed in some detail in the (selective) volumes below.**

The important point is that Adamson and his contemporaries were the heritors of an established tradition of Scottish excellence which was only just beginning to wane. It is estimated that in the first half of the 19th Century, nearly 95% of British M.D's had been educated in Scotland.***

In 1826, medical education in Edinburgh was a fairly flexible affair. There was no absolute commitment to matriculate, follow a fixed course of study, then graduate. The degree of M.D. was awarded after four years of (successful) study but in 1825 this formed the smallest proportion of the student body. The largest group by far was that of the "Occasional Auditors" (10). These were students who enroled for courses but left without a certificate. Although 70% of these students studied for one year only (period 1763-1826) their fees accounted for 64% of professional income and they were consequently an important,

* N. Harte and J. North, The World of U.C.L. 1828-1890, London 1991

** O.D. Edwards, Ibid, Esp pp116-137
L. Rosner, Medical Education in the Age of Improvement, Edinburgh 1991
A. Chitnis, The Scottish Enlightenment and Early Victorian English Society, London 1986, Chaps 1 & 2
J. Comrie, History of Scottish Medicine, Vol II, London 1932, pp473-511
F. Poynter (Ed), The Evolution of Medical Education in Britain, London 1952

*** C.F. Newman in F. Poynter Ibid, p49

if ill-documented body. Other classmate students of Adamson included apothecaries, surgeons and physician apprentices and military surgeons. Since pure surgeons and physicians tended to confine their practice to larger population centres, the surgeon-apothecary was a very common occurrence in a largely rural Scotland. The most popular professional qualification however in Adamson's time was the Diploma from the Royal College of Surgeons. This had several advantages which will be discussed later. Before the Medical Act of 1858 a doctor was allowed to practise medicine if he had an M.D. from any of the old Scottish Universities (or London), or if he held a Diploma from the Royal College of Surgeons of Edinburgh, the Royal College of Physicians of Edinburgh, or the Faculty of Physicians and Surgeons of Glasgow. It was therefore not absolutely necessary to have an M.D. to allow one to set up in practice.

At the time Adamson was beginning his studies at Edinburgh, the entire University system in Scotland was being thoroughly investigated by a Royal Commission of Inquiry (1826-30, pub. 1831). In this, the first such investigation for 130 years, medical teaching came in for particular criticism, especially the practice of awarding M.D. degrees by post, particularly by Aberdeen and St. Andrews Universities. St. Andrews attracted particular opprobrium; not only were the buildings in such a poor state of repair that the King's Architect in Scotland, Robert Reid was summoned to urgently advise on repairs, but what little medical teaching there was amounted to virtually no more than a day-release class for the town's apothecaries.

Although Dr Briggs in his evidence admits that the "greater proportion of the degrees [were] conferred upon persons that did not personally appear" (11) he insists when being asked about degrees being awarded to unqualified persons that he is "perfectly confident, with the exception of one, that there has been no such instance" (12). Perhaps Briggs was being less than objective however since, as librarian, he received £15-19-3d for the library for each degree conferred. It certainly seems suspicious that in the year before new regulations were hurried in (ahead of the Commission's investigation) there were 47 degrees awarded but in his evidence to the Commission he admits that out of 35 or 36 applications for an M.D. "not one could be granted" (13).

Having no Medical School, of course, St. Andrews could do no other than award the degree on attested petition and in this it was doing no more than other Universities, including Edinburgh, had done.

Indeed, it was Edinburgh University which (in 1766) had awarded an M.D. to Samuel Leeds, an illiterate London brushmaker, and the Lawsuit following the affair led to some suspicion of the validity of Edinburgh degrees but what one author calls "the superefficiency of the Edinburgh University publicity service" (14) seems to have triumphed and by the early 19th century Edinburgh was undoubtedly the pre- eminent centre for medical education in Scotland, if not Britain. In a thinly veiled swipe at St. Andrews and Aberdeen, a spokesman for the Society of Physicians of the UK (a body composed mostly of Edinburgh graduates) wrote in

1826, "It is now the common practice, with the most ignorant and illiterate pretenders in medicine, to furnish themselves with a medical diploma from one of those Scotch Universities who, to their eternal disgrace, traffic in degrees and bestow them, without examination, on persons the most unqualified to possess them. The public unfortunately confounds (all Scottish graduates) together and a Scotch physician is become almost a term of degradation (15).

Whether or not degrees were awarded spuriously (and there seems little documentary evidence to support such a claim) it is clear that there was some cause for concern over the structure of medical teaching and some standardisation of a core curriculum was necessary to restore public and professional confidence.

That, very briefly, was the background both in his home town and his place of study, against which Adamson was commencing his medical career. On his arrival at Edinburgh the 16 year old Adamson had the choice of the following subjects for the November term when he and his fellow students convened in the Library to matriculate and inform the clerk which courses they wished to sign up for. (N.B. Although the matriculation records for Adamson's years have tutor and subject lists cut from some publications and inserted in each volume it is clear from a cross-check of tutors, subjects and dates that these have been inserted at a later date, certainly after 1832. For example, Dr T. Traill is listed as teaching Medical Jurisprudence in 1826-27 but he was still working in Liverpool at this time where he remained until returning to Edinburgh (from where he had

graduated in 1802) in 1832. The following list is from the Edinburgh University list of courses which appears in the "Scotsman" of 7th October, 1826.

Dietetics/Materia-Medica/Pharmacy

Dr Duncan Jnr.

Practise of Physic

Dr Home

Chemistry and Clinical Pharmacy

Dr Hope

Theory of Physic

Dr Duncan Snr, Dr Allison

Anatomy and Pathology/Principles and Practise of Surgery

Dr Monro

Theory and Practise of Midwifery

Dr Hamilton

Clinical Medicine

Dr Duncan Jnr., Dr Home

Clinical Surgery

Mr Russell

Military Surgery

Dr Ballingall

Medical Jurisprudence

Dr Christison

Royal Infirmary - Noon Daily

Summer Courses

Botany	-	Dr Graham
Lectures in Clinical Medicine		Dr Home
Lectures in Clinical Surgery		Mr Russell

According to Charles Darwin, joining the 1825-26 session, a year before Adamson,

"We were matriculated on a Saturday: we pay 10/- and write our names in a book and the ceremony is finished" (16).

As stated before, although matriculation was not compulsory it had increased in importance as the numbers of students increased. In the early 1800's many students did not bother because it cost money and it was not an absolute pre-requisite to attend a class. Non-matriculation however did prevent a student from using the Library but clearly this was not regarded by some as a major hindrance. By Adamson's time however, matriculation was compulsory as it was deemed to be "the only legal record of their attendance in the University" (17). Of course, it was not a "record of attendance", merely one of enrolment and then, as now, the one did not necessarily follow on from the other.

Much more important was that the requisite class fee should be paid to the appropriate professor and a ticket for their class obtained as admission was strictly controlled by the janitor at the door and no ticket invariably meant no admission. The fee for each course was the same and had risen in 1822 from 3 guineas to 4 guineas (18). Information on courses was available to students either from the "Edinburgh Students Guide", The Medical Calendar or the more anecdotal "Guide for Gentlemen Studying Medicine at the University of Edinburgh". Naturally more senior students signing up for further study were also willing to commend or condemn courses and lecturers from their own experience.

For his first term Adamson signed up for Chemistry and Materia-Medica. The extremely comprehensive Chemistry course was taught by Dr Hope and consisted of five lectures per week in November, followed by six lectures per week for the ensuing five months. Thomas Charles Hope (1766-1844) was Professor of Chemistry and Medicine for 45 years from 1799-1844. Although he seems to have been one of the most popular teachers ever (with over 500 students in 1820) (19) he seems to have followed his predecessor (Dr Joseph Black) in that he preferred to teach Chemistry on philosophic rather than practical lines. Having said that however, he was apparently not averse to some practical elements and his somewhat theatrical demonstrations earned him the title of "the showman in the other corner" (20) from John Leslie (Professor of Natural Philosophy, ie physics), but his colleague, Robert Christison states that his lectures were characterised by "uncommon clearness of exposition, and unexampled splendour and success of experimental demonstration" (21). Another observer, Prince Adam Czartoryski, while attesting to the "elegance" of his lectures claimed that he was "little known for his discoveries and a man rather limited generally" (22). Clearly, Hope was different things to different people; perhaps the success of his classes and the popularisation of his subject (his lectures on Chemistry for the ladies of Edinburgh attracted 300 women in 1826, drawing in £700) were envied by his less flamboyant colleagues. For whatever reason, Chemistry was the highest attended course (76%) taken on an average course attendance between 1763 and 1826.

Adamson presumably enjoyed the Chemistry which was to stand him in such good stead in both his professional and photographic capacities.

Adamson's tutor for Materia-Medica was Andrew Duncan Jnr. (1773-1832). Duncan was also an Edinburgh graduate, gaining an M.A. in 1793 and M.D. in 1794. In 1805 the Edinburgh Medical and Surgical Journal was issued under his editorship and he remained so for 22 years until succeeded by Robert Christison in 1827. Duncan also produced the "Edinburgh New Dispensatory" which was such a useful book for physicians that it had run to its tenth edition by 1822 and was widely published in Europe and America.

Duncan seems to have been keen to stay abreast of recent developments, British and foreign, in medical literature and was often found at his desk at 3.00 a.m. reading or improving his lectures. Unfortunately all this preparation seems to have been lost on his students if the views of Charles Darwin are in anyway representative. In a letter home he wrote "Dr Duncan's lectures on Materia-Medica at 8.00 a.m. on a winter's morning are something fearful to remember" (23).

For his second winter term, 1827-28, Adamson, now student number 871, chose Institutions of Medicine and Anatomy as his subjects.

Institutions of Medicine, or Medical Theory had previously been a rather ill-defined course, a sort of mixture of bits and pieces from other courses but by Adamson's time, the course was basically one of physiology. This course was taught by William Pulteney Alison (1790-

1859) who had previously held the Chair of Medical Jurisprudence but from 1821-1842 held the Chair of Institutions of Medicine. Alison was also a graduate of Edinburgh University (M.D. 1811) who, at the early age of 25, was appointed physician to the New Town Dispensary. Like Christison, he was interested in epidemiology and fevers, publishing quarterly reports in the Edinburgh Medical Journal on the city's fevers. He was particularly interested in the effects of social deprivation on health and his work in the New Town Dispensary would have given him plenty of first-hand experience in dealing with the poor and underprivileged. In 1840 he published a pamphlet "Observations on the poor in Scotland and its effect on the health of great towns" (24) and when the Scottish Poor Law was finally passed in 1845 it contained many of Alison's recommendations. It is entirely possible that Adamson gained his enthusiasm for public health and sanitation from attending Alison's classes.

Adamson's tutor for his second subject, Anatomy, was Dr Alexander Monro (1773-1859), the third and apparently worst of three generations of anatomy teachers. Nepotism seemed to be rife in the medical faculty at Edinburgh, 8 out of 10 professional appointments between 1790 and 1807 going to sons of previous professors (25). Monro certainly seems to have been one of the less talented appointees, accused of reading verbatim from his grandfather's notes of a century before, even down to the phrase "when I was a student at Leyden in 1719" (26). Whether this was apocryphal or not he was certainly not a popular lecturer, many students

* A more recent assessment of the Monro dynasty can be found in R E Wright-St Clair, Doctors Monro: A Medical Saga, London 1964

enrolling for his course only to take their tuition elsewhere. Charles Darwin, who had attended Monro's class the year before Adamson, wrote in his autobiography

"Dr Monro made his lectures on Anatomy as dull as he was himself and the subject disgusts me" (27).

In a letter to his sister he continued

"I dislike him (Monro) and his lectures so much that I cannot speak with decency about them. He is so dirty in his person and actions" (24).

It is quite possible, if not probable, that Adamson was one of the many who sought more professional tuition within the extra-mural facility which shall be discussed briefly later.

For his third and final year Adamson (student number 922) took Theory and Practise of Midwifery, Clinical Surgery and repeated Institutions of Medicine. The repeat of the Institutions may mean that he failed the course but W.P. Alison in his evidence before the Commission stresses the importance of taking important courses twice. Unfortunately no documentary evidence could be found to say which was the correct motive in Adamson's case.

The Midwifery course was taught by Dr James Hamilton (1749-1839), another dynastic appointment succeeding his father Alexander to the Chair of Midwifery in 1800. By all accounts Hamilton was a forceful and successful lecturer with large attendances, even though midwifery was not a pre-requisite for graduation. (In spite of Hamilton's campaign it did not become so until 1833). His zeal to increase the status of midwifery may have been occasioned by the fact that the Professor of Midwifery was not a full member of the

Medical Faculty and did not therefore receive any share of graduation fees.

He did not however seem to get on with his colleagues, narrowly avoiding a lawsuit with one and actually getting involved in one with another which resulted in the plaintiff being fined £100 for attacking Hamilton with his walking stick. He is said

"to have remarked that he would willingly pay double for another opportunity" (29).

His somewhat eccentric character seems confirmed by the fact that he was the last recorded person in Edinburgh to use a sedan chair (now in National Museums of Scotland). His successor to the Chair (of Midwifery) was James Y. Simpson (1811-1870) pioneer of anaesthesia and fellow graduate of Adamson in 1829.

Clinical Surgery was taught by James Russell (1754-1836) who was the first holder of the Chair of Clinical Surgery in 1803 and which he held until 1833. Indeed he had recommended that the Chair be founded for himself and it must be some measure of his worth that the council agreed (Edinburgh University at that time was run by the town council). This appointment cemented close links with the Royal Infirmary which was an important adjunct to clinical teaching. As a lecturer, one of his pupils of some years ago had written he was rather

"somnolent .... betrayed by an inveterate habit the professor had of yawning while he spoke and continuing to speak while he yawned" (30).

Twenty years on and now over 70 one wonders what his lectures to Adamson and his classmates must have been like. Unlike Hamilton however, he seems to have been well enough liked by his colleagues, being

"singularly free from the jealousies and rivalries of his contemporaries" (31).

As well as lectures, students were obliged to attend the Royal Infirmary at noon daily to review actual medical and surgical cases. The Royal Infirmary had been built in 1741 after a degree of bickering between the College of Physicians and the College of Surgeons. It had provision for 228 beds (32) and since such a figure was deemed in excess of the city's own needs (the physician's hospital of 1729 had provision for only 5 beds) it is presumed that cases would be welcomed from other parts of the country providing an unparalleled opportunity for clinical teaching. This symbiotic relationship between hospital and university was clearly successful for by the time Adamson went to Edinburgh in 1826 over 20% of the income of the Royal Infirmary was raised from student fees.

Regulations also state that every candidate must produce

"a certificate from a professor or teacher of Anatomy recognised by the College, that he has actually been engaged in the dissection of the human body" (33).

The increased emphasis on practical anatomy introduced between 1824-1830 ran into difficulties in the supply of bodies for dissection. In 1828 there were 900 students of one sort or another studying Medicine at Edinburgh (34) and

the Committee (drafted to reply to Peel's inquiries about the practise of Anatomy in Edinburgh - May 1828) reached the conclusion that annually

"300 (pupils) would necessarily require to attend courses of practical anatomy and that the supply of subjects should be at the rate of at least one body per student" (35) This optimistic ratio (today it is 5-6 students per body) led to the procuring of bodies by nefarious practises culminating in the Burke and Hare scandal of 1828. The names of Burke and Hare are unfortunately inextricably linked with one of the most successful teachers of the time.

"Burke's the butcher, Hare's the thief,
Knox the boy that buys the beef." (36)

Robert Knox (1791-1862) had succeeded Barclay as one of, if not the, most successful extra-mural teachers of anatomy. Extra-mural schools were not supposed to be regarded as rivals to University teaching but rather as complementary institutions. Most were recognised by the University and the College of Surgeons and a certificate from one of these extra-mural teachers was regarded as the equivalent, and in some cases the superior, of any certificate from a University Professor. Indeed one writer regards the extra-mural schools as "a recruiting ground from which many University Professors have been chosen" (37).

Knox is of relevance here because Adamson was taking his surgery course in 1828 and given the poor reputation of Monro, whose course on surgery was regarded as inadequate by the Royal College of Surgeons for their Diploma (38) it is more than likely he enrolled in one of the extra-mural

classes in Anatomy of which Knox's was by far the most popular (attracting 504 students to his rooms at 10 Surgeon's Square in 1828 (39). Although one author states that Knox taught Physiology and Pathology as well as Anatomy "he never included Surgery" (40). A handbill however of 1828, advertising Knox's courses for the session, offers Anatomy and Physiology as well as Practical Anatomy and Operative Surgery (41). There is also the fact that regulations stipulated that candidates must have completed two courses in Anatomy (42) and since Adamson is only matriculated for the one with Monro so he presumably must have got his second certificate from an extra-mural professor.

Since there was no system of registering for a specific degree we cannot be sure if Adamson had intended to do an M.D. or not but the Diploma of the Royal College of Surgeons (whose holders were entitled to be called Licentiates of the Royal College of Surgeons was becoming an attractive alternative to young men studying Medicine for three main reasons; it was cheaper to graduate, £6.00 as against £25.00, it took a year less to complete, three terms instead of four, and it allowed one to set up in practise immediately. Adamson however, was one of the last to graduate under this system and subsequent students had to attend at least four winter sessions (or three winter and three summer sessions) (43).

The fact however that Adamson seems to have followed the subjects recommended in the Regulations of 1821 for the Diploma of the Royal College of Surgeons suggests that it

was his intention to do the Diploma rather than the M.D.

"Every candidate who has not served an apprenticeship of three or more years to a regular practitioner must produce certificates of his having attended the instructions of the above designated teachers for a period of three or more winter sessions in the course of which he must have attended lecturers on Anatomy, Chemistry, Institutes or Theory of Medicine, Principles and Practise of Surgery, Midwifery, Materia-Medica plus one year attendance at a public hospital." (44)

One was also supposed to be 21 years of age and over to graduate M.D. or Fellow of the Royal College of Surgeons but Alison in his evidence to the Commission admits of the difficulties of establishing age that they (the College) have always accepted a solemn declaration and the signing of a Latin form as proof of age. In the absence of birth certificates however, absolute proof of age would have been difficult. The Commission suggest an extract from the parish register. It does not state in the regulations if any age limit applies to licentiates but as Adamson could only have been 19, or at most 20 on completion of his diploma it would appear not.

As well as class certificates, tickets of attendance were also required. Proof of attendance at lectures was either by roll-call or an on-the-spot collection of class tickets by the janitor at the door. Attendance had to be noted at least 25 times by the Professor of each class and an absence of more than four times (without reasonable excuse) resulted in no certificate being awarded.

At the completion of the three terms of study Adamson was then eligible to present himself to the College of Surgeons for examination. These examinations were held on the first and third Tuesdays of each month and the prospective candidate had to ensure the following:-

"Applications for examination must be made to the President of the Royal College two days previously to the day of examination. Every candidate for a Diploma .... is required to present his tickets and certificates and also a written statement containing his name, age and country and a list of all of the classes, hospitals and dispensaries attended during each session of his study." (45)

The examination, which included a compulsory Latin translation, was then undertaken.

Adamson's success is recorded in the list of successful candidates published in the Edinburgh Medical and Surgical Journal of 1829.

"The following gentlemen, 204 in number .... have been found fully qualified to practise the Arts of Anatomy, Surgery and Pharmacy and have received Diplomas accordingly." (46)

The popularity of the Diploma is evinced by the fact that there were 204 of these awarded while at the same time less than half that number (99) qualified as M.D.

ADAMSON ABROAD

1829 - 1835

After obtaining his Licentiateship in March 1829 we are virtually reliant on the information contained in his obituaries for Adamson's movements between then and his return to St. Andrews in 1835. So far it has not been possible to verify many of the claims made by his obituarists as regards his movements abroad. Those enquiries which have been answered have been negative in respect of records either missing or destroyed, or never having existed. It is therefore difficult to be emphatic about what he did, when and where. Inevitably therefore, we must rely on inference and educated guesswork to provide some sort of framework for these enigmatic five years.

One fact exists which gives at least some sort of solid foundation from which to proceed. We have Adamson's own testimony that he was in Paris in 1830. This occurs in a minute of the Literary and Philosophical Society in 1860 and is in response to a discussion regarding a M. Renon's theory of the periodicity of severe winters. The minute records that,

> "The central winter of Renon's last graph is 1830 which Dr Adamson stated from his own experience had been remarkably severe in Paris - sentries on duty having been in several instances found dead at their posts." (47)

Adamson had certainly picked a lively time to be in Paris since only a few months previously the July Revolution had occurred which resulted in the deposition of Charles X and the crown given to the "Citizen King", Louis Philippe.

There was a considerable amount of popular support for the revolution in Britain and especially in Scotland. The Tayside evolutionist Patrick Matthew, who had coined the term "natural process of selection" in his work "Naval Timber" in 1831 (as Darwin set off on the Beagle) gave up his work on this volume to support the July revolution and there was again the worry that the ultra radical thought sweeping France (and indeed Europe) might spread to Britain where the pressure for electoral and agricultural reform was mounting steadily and inexorably. It would also appear that fear of radicalism from abroad was not always from the continent outwards. According to Desmond,

> "The Scots deistic sciences had already been damned by Cuvier for contributing to the anti-clerical feeling around the time of the July revolution." (48)

Scottish graduates who had returned from France and were taking up appointments in the recently founded (1826) University of London were certainly causing some alarm in more conservative quarters with their peculiar mix of pragmatic Calvinism, continental learning and native wit.

There was then a well established pattern of Scottish-Franco education available for Adamson to take advantage of.

Apart from the more esoteric attractions of exposure to continental thought and ideas, there were sound practical reasons for a new medical graduate to spend some time in the

Parisian medical schools. The largest hospitals in Paris, the Hotel Dieu and St. Louis both had 1200 beds, and another eight had upwards of 300-600 beds. According to one estimate,

> "30,000 patients a year were treated; four fifths of those who died were dissected. (A situation unheard of in London.)." (49)

Those with surgeon's diplomas, like Adamson, could obtain free tickets for the classes of M. Dupuytren, the eminent surgeon at the Hotel Dieu. Access was also possible to military and venerial clinics. This meant that the British medical students visiting Paris, of whom a great many were Scots,* had access to a much broader sphere of clinical study as well as access to almost unlimited (compared to Britain) dissection facilities.

The courses in Paris ran from November to March (winter) and April to August (summer). There were no classes in September or October. The most obvious attendance therefore for an impecunious Scot would be to start in November and finish in August which saved having to support oneself in Paris through the two vacation months. At time of writing it has not proved possible to trace Adamson on record in Paris. Neither has any record of him been found in Dublin** where one obituarist states that he spent some time, but the same reasons for going to Paris seem to apply to Dublin;

* For further information on the tradition of Edinburgh medical students visiting Paris or the continent, see, for example, Desmond A., The Politics of Revolution, London 1992
Jacyna L.S.(Ed), "A Tale of Three Cities: Correspondence of William Sharpey and Allen Thomson", Medical History, Supplement No. 9 (1989), Esp. Introduction

** (N.B. A Wellcome research fellow in the history of medicine is to be working in this area from 1993 so some answers may eventually be forthcoming.)

namely the widening of experience. Dublin had twelve sizeable hospitals including an infirmary for skin diseases and an Institution for the Diseases of Children.

Since Adamson only finished his diploma in March 1829 it seems unlikely that he would immediately go to Paris in time for the April session. We know that he was in Paris in the winter of 1830 but cannot be sure if it was the winter of 1829-30 or that of 1830-31. The presence of sentries suggest that it was probably post revolution and if we accept this assumption then it seems reasonable to assume that Adamson was in Paris for the November-March 1830-1831 winter course and the April-August 1831 summer course. It is possible that he went to Dublin after this to consolidate the experience gained in France.

According to the obituary in the Edinburgh Medical Journal, Adamson,

"... spent some time in the medical schools of Paris, and as surgeon in a voyage to the Chinese seas." (50)

The Lancet however, state that,

"After visiting the Medical Schools of Dublin and Paris he practised in India and China." (51)

A poem, in memoriam, published shortly after his death (see Appendix 4) suggests that Adamson travelled even further afield than this,

"....From far Vancouver's Land to Ganges tide,
From Honolulu to the Northern Pole,
For grief will fill the Indian bungalow,
In many a far-off sea and distant shore."

Allowing for a degree of artistic hyperbole, it does seem probable that Adamson did travel abroad, but, so far, it has not proved possible to state with any certainty where he went for the last three years (assuming one year in Dublin).

If Adamson did go on a voyage to the China Seas as ship's surgeon, we can state with some confidence that he did so after July 1833. Up until that date the Honourable East India Company held a rigourously enforced monopoly of trade to China. It also kept meticulous records of all its employees including surgeons and Adamson does not appear in the registers for 1829-35 (52). After this period, independent companies were able to trade with the East and it must be assumed that Adamson signed on with one of these.

The time-table for sailing ships was fairly rigid and this makes it easier to postulate a possible time-table for Adamson's voyage. Ships bound for India took four or five months to reach their destination, and China about two months longer. They were despatched in order to round the Cape in time to catch the trade-winds of the South-West monsoon. Vessels therefore left Britain from around December to early January and would arrive in China around July. There were, apparently, exceptions to this general rule however. William Jardine, like Adamson, gained his surgeon's diploma in Edinburgh (1802) and signed on as a ship's surgeon with the Honourable East India Company. His own account of his voyage states that he left London in March and arrived at Canton on 7th September (53). Homeward-bound vessels left the east from November until

early January. Adamson therefore, most likely left Britain in or around December 1833, arriving China July/August 1834. If he then left the east in December 1834 he would be back in Britain by July 1835 which would account for his being,

"settled down in the autumn of 1835" (54)

in St. Andrews.

Ships tended to re-victual at Bombay or Madras before going on to Canton so it is possible that Adamson could have spent some time in India as well, making both his obituarists correct to some extent. (Although he does not appear on the roll of the Indian Medical Service.) (55)

Several independent companies do have some records from this period (although some only list master and selected officers) but so far it has not proved possible to trace Adamson amongst them.

We can therefore state with some certaintly that Adamson spent the five years between qualifying in Edinburgh and his return to St. Andrews engaged in travel to broaden his medical experience but the absence at present of documentary evidence means that the details of his travels remain elusive.

ADAMSON'S ST. ANDREWS

1835 - 1838

Scotland from the 1820's onwards was becoming increasingly urbanised, over 31% in 1831 rising to over 53% in 1891 living in centres of 5,000 or more (56). The year after Adamson returned to St. Andrews the population of the parish was 5,725 with over a quarter of that total under 12 years of age (57). The medical directory of 1870 however, the year of Adamson's death, lists the population of St. Andrews as 5,141 (58) so if both figures are to be believed it would appear that the population of the town was in decline, a possibility given the enormous emigration rate in mid-Victorian Scotland, over 2.8 M leaving UK between 1853 and 1880 (59).

St. Andrews itself certainly changed in appearance during Adamson's lifetime. Described in Lyon Playfair's Memoirs as

> "probably the sleepiest little town in Great Britain" (60)

in the 1820's. Playfair, on his return from military service in India in 1834 threw himself enthusiastically into local government and began a survey to see where improvements could be made. Attempts had been made in the past to improve the streets, South Street had had £1,400 spent on it in 1823 and the large blocks of stone in Market Street, where

> "aged citizens were in the habit of estimating their comparative agility by the facility with which they could leap from one stone to another" (61)

had been replaced by paving in 1820. This impetus had not been maintained however, and the streets had reverted to their former neglected state. One writer describes

> "streets covered in grass, the water courses obstructed by mud and the external aspects of the houses dingy and disagreeable ..... amid crumbling walls and green clad streets the citizens lived in contented ease and hopeless indifference" (62).

One newspaper writer, in a barely disguised assault on the Whig town council waxes lyrical with a shameless barrage of nautical metaphors.

"Wanted by the inhabitants of St. Andrews, one Provost, three Baillies and nine Councillors... for the good ship St. Rule is now on its beam ends, her sails and standing rigging in tatters, her hull damaged and leaky.... provisions quite exhausted, not a shot left in the locker" (63) and so on in a similar vein.

A few weeks later, in November 1842, the Whig council was ousted and a Conservative majority returned,

> "the Whigs are out, ... the incubus is removed ... the men of large promises but no performances are superceded" (64).

The following week, the "ship" had its new Captain when Hugh Lyon Playfair was unanimously nominated for provost of St. Andrews.

> "To be selected by one's fellow citizen's to fill the Chair I now occupy, I regard as the highest honour and the most flattering distinction you have in your power to bestow or I to desire." (65)

But during the Whig tenureship of the town council, one might, from the above reports of the condition of the town, be forgiven for thinking that life in St. Andrews was a veritable health hazard but this would not appear to be the case according to a report in 1827 by a physician resident in the town.

> "The great width of the streets and the extensive gardens interspersed, afford the fullest ventilation, and except in some of the narrow closes, there is no obstacle to the admission of pure air into the houses of the inhabitants" (66).

He does acknowledge the existence of open sewers as a source of disease in large cities but sees no evidence of this in St. Andrews, claiming that "epidemic diseases are scarcely known in the city" (67). Even typhoid, which one would normally associate with stagnant water is claimed to have passed St. Andrews by in 1818, seemingly "the only place in the UK which was not visited by the epidemic" (68). It is difficult to verify this since civil registration of mortality did not begin until 1855, but there seems little reason to doubt it. Even if true however, open sanitation and place names like "Foulwaste" (Union St.) were hardly likely to sustain Playfair's vision of a modern borough. Adamson's own report of 1841 provides an excellent social cameo of St. Andrews at this period. He covers a wide range

of issues, from wages and housing to the 12,000 gallons of whisky sold annually in the town and the "moral cancer" amongst the fisherfolk of North St. (69). The architectural progress of the middle-decades is well documented and need not be repeated here but is typified by designs like William Burns', Madras College of 1832-34, George Rae's Bell Street of 1842-58 and John Chesser's Abbotsford Crescent of 1865 onwards.

Playfair's architectural impetus for the town was mirrored by Adamson's zeal for sanitary reform and environmental health. Perhaps his visits to the old town during his Edinburgh student days had made him all too aware of the need for a more efficient effluent disposal. After all, one of his ex-tutors (Alison) had written in 1840

> "Let us look to the closes of Edinburgh and the wynds of Glasgow and thoroughly understand the character and habits, the diseases and mortality of the unemployed poor." (70)

Medical opinion however, was not of one mind on the problem of sanitation. It was divided between the "contagion" theory which saw close contact between infected persons as the vector for propagating disease and the "miasma" theory which favoured infection from noxious emissions from middens and ordure heaps. Presumably the more enlightened were aware that both theories had something to offer. As one writer observes however, those who favoured the "contagion" theory were less likely to be enthusiastic about introducing expensive running water sanitation, as in the case of Glasgow's Medical Officer of Health, James Burn Russel, who

favoured the "earth closet" as late as 1872. According to one of his obituarists Adamson was among the first

> "to trace the intimate connection between cholera, fever and the like with the undrained districts of towns" (71).

It would appear that Adamson was also among the first to realise the importance of maintaining statistical medical data since in 1841 he presented a paper on the fevers occurring in his practise during the past five years (72). He also kept notes on the mortality rate of St. Andrews which he presented to the Literary and Philosophic Society, correlating his data along with meteorological data since, as he writes,

> "it might interest the Society to compare it with the meteorological phenomena detailed in the paper by Mr Tennant" (73).

He continued to present mortality data on an annual basis. Ironically enough, his last motion to the Society (November 1869) was to be the sending of a memo to the Registrar General "with a view to the improvement of the present system of registration of deaths" (74).

This however, was still some years in the future. In late 1835 Adamson had returned to his native St. Andrews to practise medicine. He had completed three years at Medical School and consolidated and broadened this knowledge with six and a half years of study and practical physicianship abroad. He was still only 25 years old! At this time however, there were six other physicians in St. Andrews including Dr Briggs, Professor of Medicine and Chemistry so

it is hardly surprising that young Adamson had the "fag-end" (75) of the practise to begin with.

A few weeks earlier, when Adamson was presumably en-route home, and Talbot was producing his first paper negatives of Lacock Abbey, a firm "Messrs Maiden" were in St. Andrews offering "likenesses" by "a machine of unerring principle which in every instance ensures the resemblance beyond the possibility of failure" (76). This machine was presumably either Lavater's Silhouette Machine where the sitter held the head close to a screen and backlighting projected a profile which was traced on the other side by the "artist"; or the "physionotrace" which used pantographic levers to trace the sitter's outline which could be left simple or finished as a profile portrait. Since the cost of a likeness was 1/- (5p) it is unlikely that a full portrait in oils was on offer. Announced as "The Arrival of the Artists" (77) it must have been a popular attraction however since they stayed in St. Andrews for seven weeks (always advertising a stay of one more week due to popular demand!) and the business was open from 10.00 a.m. - 7.00 p.m. daily in South Street. Clearly, due to the interest shown in St. Andrews and elsewhere there was a market available for modestly priced likenesses and ready for photography to exploit.

The following January saw the first gas "lustres" being lit in the streets of St. Andrews (78). Although there had been examples of early domestic lighting by gas, Dundarane Abbey in 1787, or Walter Scott's Abbotsford in 1823 (79), it was not until the 1850's that gas lighting was becoming

utilised in middle and upper class homes. Not the clear white flame made possible by Aver's "Lace Mantle" in the 1880's (80) but a "yellower, smellier, smokier and hotter" (81) flame.

Adamson certainly had domestic gas lighting by 1853 and, as will be discussed later, was using it for photographic experiments.

St. Andrews, for long a place of pilgrimage until the Reformation, was again becoming a centre of interest as a tourist resort. Presumably only the aims had changed, pleasure instead of piety, although medieval pilgrims seemed to indulge in both in approximately equal measures and one is reminded of Turner's observation that "a tourist is half pilgrim if a pilgrim is half tourist" (82). A correspondent to the Journal in July 1836 wrote that "St. Andrews is at present very gay, the influx of beauty and fashion having been for some time past considerable. The advantages which are afforded to bathers at this season generally render it a favourable place of resort." (83)

In spite of his obituarist's pessimism, Adamson was certainly seeing some medical practice during 1836 since an article in the press gives an account of his examining, "under direction of the civil authorities" (84) a couple who had been found starved to death. A young girl was also found in the house near death with cold and starvation and this does tend to emphasise the not so "very gay" face of St. Andrews and elsewhere faced by the poor. Scotland's Poor Law was still some years away (1845) and, once again, Adamson may have been made more aware of the deprivation of

the poor and its consequences by the work in this field of his former tutor, William Pulteney Alison. Adamson's work amongst the underprivileged is certainly acknowledged in the tributes following his death,

> "high in favour mid the world renowned, yet still the poor man's friend" (85) or
>
> "that man surely has not lived in vain whose grave has been watered by the mingled tears of the rich and the poor" (86).

Admittedly, perhaps this sort of work was regarded by the other physicians as the "short-straw" since there was little financial gain or prestige involved. It should also be remembered that at this time, unlike today, physicians were held in higher esteem than surgeons and Mr Adamson, without an M.D. to his name, would have been very much the junior partner.

For whatever motive, impecuniosity or merely time to spare, Adamson decided to teach part-time at Madras College. "Mr Burns will begin a course of Natural Philosophy and Mr Adamson a course of Chemistry on Tuesday, 1st May next. The fee in each class is 7/6d per quarter" (87). This advertisement appeared in the local press on 12th April. Exactly one week later the St. Andrews Literary and Philosophic Society came into being and Adamson became the Curator of the as yet non-existent Museum of the Society. It seems not unreasonable to infer from this that Adamson must have had more than a passing interest in Natural History and things museological in order to allow his name to go forward for nomination. Although this thesis is primarily interested in

Adamson's photographic contributions, there is much that could be written about his museological career since it is clear that he took his responsibilities as Curator very seriously indeed and we must place this aspect of his career in some sort of wider perspective.

Although a somewhat over-simplification, the late Georgian and early Victorian period seemed to herald a return to the more Rationalist ideals of the Enlightenment. The intervening years of the so called Romantic period had seen the

> "weapons forged by the "philosophes" to assault superstition now turned against their most cherished belief about the sufficiency of human reason, the perfectibility of man, and the logical order of the universe" (88).

It is certainly difficult to reconcile the subjective sensibility and self-doubt inherent in Romantic thought with the "Facts alone are wanted in life. Plant nothing else and root out everything else" (89) philosophy expounded by Dickens' Mr Gradgrind of a few decades later. Attitudes however were rarely polarised, and the romantic ardour of the wild and exotic appeared to co-exist quite happily with the Victorian zeal for order and control. There need not be any inherent contradiction here or any conflict of interests. For example, if one wanted to collect and catalogue strange and exotic plants, then one had to visit strange and exotic places in order to do so. Herschel typifies this apparent dichotomy of interests, balancing the requirements of systematic scientific research with frequent

"escapes in solitude" (90), not however to escape from the practice of science as such, but rather from the political wrangling which surrounded it back home in Britain. This was the sort of outlook which the natural philosophers of the enlightenment had embraced, "a place for everything and everything in its place", in an attempt to bring some sort of artificial order to a seemingly infinite variety of flaura and fauna. The Swedish botanist and physician, Carl Linnaeus (1707-1778) had produced an initial system of taxonomy in 1735 (Systema Naturae) which was periodically enlarged till it provided a means of classification for both plant and animal kingdoms. His system of Binomial Nomenclature (i.e. two Latin names first for genus, second for species) is not only still in universal use but is unlikely to be superceded. This system, based on shared characteristics gave naturalists a series of taxonomical pigeon holes in which to insert and inventory their discoveries. Like their 18th century colleagues the Victorians were no less anxious to impose their own sense of order on the apparent chaos of nature. Industrialisation had shown that nature could be bent to man's will and this sense of dominating nature carried through with the Victorian passion for collecting and naming. After all, once something had been assigned to a family and an order, given two Latin names, an accession number, a catalogue entry and a label and assigned to its place in the drawer or cabinet, it had been well and truly de-mystified and subjected to man's passion for ordering.

Industrialisation had also witnessed the birth of a new breed of collector, the capitalist entrepreneur. Whereas previously large private collections had been predominantly the prerogative of the aristocracy, this new class of wealthy landed gentlemen had both the means and the leisure time to indulge in such pursuits. Collections, becoming ever larger, required housing and although the late Georgian/early Victorian eras can not claim to have originated the museum per se, it certainly saw their numbers proliferate dramatically. Institutions which had existed for decades (such as the Ashmolean Museum in Oxford, 1683) had their somewhat eclectic collections rationalized and displayed systematically. The 1820's and 1830' were also a period which saw large numbers of professional gentlemen forming themselves into clubs and learned societies. These included the Society of Antiquaries of Newcastle (1813), Royal Geological Society of Cornwall (1814), Manchester Natural History Society (1821), Sheffield Literary and Philosophical Society (1822). St. Andrews came comparatively late in 1838, the Society of Antiquaries of Scotland having been formed in 1781 and the Perth Literary and Philosophic Society in 1784. Most of these societies had an active and unrestrained collecting policy and the majority had their own museums to display their collections for the benefit of their members and friends.* These societies often amassed such large amounts of material that

* Museums Journal, Vol 84, No 1, June/July 1984, p3-21, which discusses philosophical societies and their collections (in Yorkshire)

the upsurge of the municipal museum movement in the 1850's and 60's was in no small measure due to materials donated from them. The St. Andrews Literary and Philosophical Society responded to this mood by opening its museum to the public at selected times.

This proposal for a museum had been put forward by Adamson and it was carried unanimously (91). The St. Andrews Society clearly saw the provision of a museum as an essential element to their venture and declared it so in their statement of intent at the inaugural meeting

> ".... forming a museum in the University to which it is expected that contributions will be sent by the alumni of the university who may be settled in different parts of the world" (92).

Contributions <u>were</u> sent, donated by members, purchased, obtained or swapped in quid pro quo arrangements with foreign societies and so forth. The collecting policy appears to have been unrestricted, from coins and urns to natural history and ethnographical material such as the crania of Red Indians sent to Dr McDonald by a friend in the Hudson's Bay Company and obtained "with much difficulty and some risk" (93).

The bulk of the collection was however, of natural history material and these were exciting and controversial times for adherents of this discipline.

In 1838, after five years of travel abroad (like Adamson), Darwin first considered the idea of evolution by natural selection after reviewing his material in light of Thomas Malthus (1766-1834). In light of the essay by Thomas

Malthus (1766-1834) "on the Principle of Population" (1779) although the "Origin of the Species" (1859) was still some 20 years away.

In Darwinian evolution, although species may evolve from a common ancestor, a branching, rather than a chain or linear system, allows mutations to be added in. An undiscovered, or unpredicted new species therefore does not throw the system into turmoil, it merely requires a new branch to be added. Hence, species X and Y can still be traced to a common ancestor even though adaptive pressures have caused them to differ phenotypically from each other.

This divergent branching system of evolution had to some extent been anticipated by Georges Cuvier (1769-1832) Professor of Anatomy at the innovative and prestigious Museum d'Histoire Naturelle in Paris. If indeed Adamson was in Paris in 1830, as seems likely, it is entirely possible that he encountered Cuvier since, for foreign students visiting Paris,

> "attendance at zoology and comparative anatomy lectures was almost de rigeur at the Museum d'Historie Naturelle" (94).

Cuvier very much wanted Natural History to be accepted as an empirical science along with physics and chemistry and saw that the basis of such a structure must be a matchless collection of species from which to extrapolate data (Napoleon's sympathy for science coupled with his foreign expeditions gave him an unparalleled opportunity to build such a collection). It is not a coincidence that many eminent natural historians were also physicians or surgeons

since comparative anatomy and dissection were the main instruments of classification. In Adamson then, the society had a well-travelled curator who was also a surgeon, comparatively recently qualified and up to date with the most recent developments in anatomy. In Paris he would have been exposed to the most modern and radical thought in the natural sciences.* The British Museum had already re-arranged its collection of shells according to the classification principles of Lamarck (1744-1829), another Professor of the Museum d'Histoire Naturelle, although his theories were already under attack by the early 1830's. A public enquiry in 1835 gave the radicals their chance to propose a more scientific and research orientated role along Parisian lines for Natural History collections but it was not until 1880 that the British Museum's Natural History collections were finally separated from the antiquities with the move to South Kensington under the superintendence of Richard Owen (1804-1892) who had studied Medicine at Edinburgh in 1824.

The classification of organisms and its ramifications had caused much controversy in scientific, political and religious circles long before Darwin's theories of evolution became current. One writer considered the first half of the 19th C. ".... by far the greatest and most obsessive age of taxonomy and system building in human history". Little however is minuted of this debate by the St Andrews Literary and Philosophical Society, which either says a lot for Adamson's ability and popularity, or very little for the St. Andrews Society's radicalism, that he was able to retain

* The Professor of Natural History at Edinburgh University during Adamson's time there was the eminent Robert Jameson (1774-1854), who held the post for 50 years (1804-1854). Jameson himself had studied on the continent (under A.G. Werner at Freiburg) and he was instrumental in building up the University's museum collection as a teaching facility. Adamson may well have got his enthusiasm for natural history and museology from Jameson but unfortunately class lists only exist from 1854 onwards so it must remain speculation for now.

this important position unchallenged for over 30 years of pre- and post-Darwinian thought. (In fact, there was one minor challenge in 1859 when the somewhat controversial Dr MacDonald (Professor of Natural History) made an application to be appointed joint Curator of the Museum but after some discussion a motion was proposed and accepted that Adamson should remain sole Curator) (95).

This, very briefly and selectively was the background against which the museum flourished and although much more could be written about Adamson the "accomplished naturalist, geologist and botanist" (96) and the role of the museum, we must now look at Adamson, the accomplished photographer.

To some extent, of course, Adamson combined all of these skills when he realised that photography could be immense importance in documenting the museum's collections. Photography, in conjunction with a classification system gave it a more scientific and systematic rationale than the mere ad hoc recording of objects. (Although Robert's fox and gannet picture (RSM TY 1942 1.2) seems as much a humorous juxtaposition as anything else.) Unfortunately, not enough material is left to be emphatic about John Adamson's intentions as regards photography as a curatorial adjunct but since he was certainly the first museum curator who was also a photographer*, as well as a scientist with Parisian experience it is hardly wild speculation to imagine that he saw the immense possibilities of this application (see Plates 28 and 28a).

* Noted by A.D. Morrison-Low in "Dr John and Robert Adamson : An Early Partnership in Photography" in Photographic Collector, Vol. IV, p199-214

PHOTOGRAPHY IN ST. ANDREWS

1st Steps 1839 - 1841

1839 was a seminal year for photography in a number of ways, both in Scotland and abroad.

On Monday, 7th January of that year, Francois Arago (1786-1853), Director of the Paris Observatory and Permanent Secretary of the Academie des Sciences, gave a lecture to the Academy outlining the possible potential of the Daguerre process after having been given a private demonstration of the process by Daguerre himself.

This announcement rather took Talbot by surprise and since he had no way of knowing that the two processes, his own and Daguerre's were fundamentally different he obviously felt he had to "go public" as soon as possible in order to establish his prior claim. To this end, he engaged Michael Faraday to present some of his photogenic drawings to the society on their Friday night meeting of 25th January. These included a variety of images; flowers, leaves, lace, copy of an engraving and some views of Lacock Abbey (97). These impressions of lace and leaves etc. were, of course, only slightly more sophisticated versions of the profiles that Davy and Wedgwood had been producing on leather around 1800.* These images had been created by simply placing the object on top of a piece of sensitised material and exposing

* See also "An account of a method of copying paintings upon glass and of making profiles by the agency of light upon nitrate of silver" invented by T. Wedgwood Esq with observations by H. Davy, Journals of the Royal Institution, Vol. 1 1802, AND

R.B. Litchfield, Tom Wedgwood; The First Photographer, London 1903, esp pp185-250

to light. Obviously the more translucent the object the more detail would be transferred. A solid or opaque object would reproduce as a reversed silhouette. The greater sophistication of Talbot's method lay in the fixing of the images against degradation on exposure to light but they were still no more than contact prints however, made without a camera. Although they were undoubtedly interesting there was little more that could be done with such a limiting technique. The other views, however, a copy of Venice from an engraving, and the images of Lacock Abbey were enormously important steps for the future, heralding both the coming of photo-mechanical reproduction and conventional photography that an age of industrialisation and mass-production would make possible. It is tempting to view Talbot's lace and leaf prints as a salute and coda to the past pioneers of the photographic process, a chapter ended, while the in-camera prints pointed the way ahead. Three weeks later, on 31st January, Talbot announced his invention of the positive/negative process in a paper to the Royal Society meeting in London. The paper was entitled "Some Account of the Art of Photogenic Drawing" and gave a brief outline of his method. A second paper delivered on 20th February was much more extensive and gave full technical details of the process. The text of this was published in the London and Edinburgh Philosophical Magazine, Vol. XIV, 1839, becoming the first ever published account of a photographic process.

However, it is perhaps hardly surprising that the potential of Talbot's process was not immediately realised

since, on a purely visual level, the Talbot images did not compare favourably with those produced by the Daguerreotype process. Like modern transparencies the Daguerreotype produced a direct image on processing albeit one viewed by reflected rather than transmitted light. Like a slide therefore, or a Polaroid print, each image was unique and could only be reproduced by copying the original or taking more than one initial image.

The images produced however were capable of quite astonishing resolution of detail and possessed of sufficient latitude to cover a wide tonal range which could capture subtle nuances of light and shadow. This was extremely important for portraiture, as a face with its mid-tones removed results in a rather ghastly parody of a visage, a mask, which although may have a place in modern graphic or art photography, was unlikely to appeal to early Victorian patrons queuing to have their portraits taken.

Talbot's process must have seemed rather crude in comparison, outlines of artifacts and ill defined architectural studies, mottled through with the fibres of the writing paper in which the silver salts were suspended. Even Herschel, a firm supporter of Talbot and one of the very few people who was actually in a position to be able to compare the two processes, had confided to Arago that

> "compared to these masterpeices of Daguerre, Monsieur Talbot produces nothing but vague foggy things" (98).

Degraded image quality and excessive exposure times meant that Talbot's process was virtually useless for portraiture in its present form but the buildings

photographed, or rather photogenically drawn, exhibited a certain sfumato-like charm.

Whatever the apparent defects of the process they were clearly not of sufficient magnitude to deter further scientific investigation by those who had seen its results. One who had seen the results and was sufficiently intrigued to investigate further was the Scottish scientist, Sir David Brewster.

Perhaps one of the most remarkable things about the early years of photography was that within a few days of Talbot's photogenic drawings being exhibited to the Royal Institution, examples were being studied round the dinner table in Scotland. How the new art came so quickly to a rather run-down sea-side town in Fife was the culmination of a series of fortuitous coincidences.

The essential catalyst which occasioned these events was a man now little known outside scientific circles, the aforementioned David Brewster (1781-1868). Countless generations of children however will be familiar with one of his discoveries in the form of the kaleidoscope. Perhaps if he had named his invention the Brewsterscope he would have been assured of his place in posterity. Without him though, there would have been no Hill and Adamson, whose influence on subsequent generations of photographers is incalculable.

It seems appropriate that Brewster was born into an age of revolution; America had just gained independence, he was eight years old when the Bastille was stormed and 33 at the time of Waterloo. One of his first papers dealt with the effects of the French Revolution on science. Had

photography only been perfected 20 years earlier we might have had portraits of Napoleon and Wellington on the field of battle. This is more than idle speculation; all the elements to do so were in place and had been for some time. There was no miraculous compound discovered by Daguerre or Talbot or any other which made it all possible, merely the ability to control and utilise the elements already in place.

Brewster's main field of study was that of optics and he was described by the Astronomer Royal, Sir George Biddell Airy as

"the father of modern experimental optics" (99).

Indeed one of his optical discoveries, now known as Brewster's Law, or Brewster's Angle is a key calculation in modern laser physics (100). Brewster came to St. Andrews in 1838 to take up the post of Principal of United College of St. Andrews University but his relationship with William Henry Fox Talbot had begun as far back as 1826 when they had been introduced by the astronomer and scientist Sir John Herschel (who would himself make some pertinent additions to the understanding of early photochemistry and its language). A lengthy friendship developed between the two scientists and Brewster and Talbot corresponded regularly although only the Brewster half of the correspondence remains, Talbot's being lost in an unfortunate fire at Belleville House near Kingussie in 1903. Brewster's letters however convey an almost boyish enthusiasm to learn every aspect of the new process. Talbot, to his credit seems to have held nothing back in explaining his process to Brewster, displaying none

of the professional jealousy or secrecy which so often mars or retards scientific discovery (Although the fact that he sent the details of the process to Brewster in two halves suggests he had less than complete confidence in the postal system.)

It is entirely possible that the Scottish involvement in the photographic process may have gone no further than a scientific correspondence between Brewster and Talbot but for a rather fortuitous occurrence.

The following proclamation appeared early in 1838:

"Several gentlemen connected with the University of the city of St. Andrews being desirous of establishing a Literary and Philosophic Society, are anxious to receive the names of gentlemen who are disposed to countenance such an institution.

Besides the general object of promoting literary and philosophical research, the society would especially have in view the establishment of a museum in the University.

The annual subscription to be limited to half a guinea" (101).

Accordingly in Parliament Hall (the Old University Library), at 1.00 p.m. on Monday, 16th April, 1838 the first office bearers of the St. Andrews Literary and Philosophical Society were duly elected. The office of president was fulfilled by the Rt. Hon. Lord WRK Douglas and there were three vice presidents, Sir David Brewster, the Rev. Haldane and the Rev. Dr Cook. John Adamson accepted the post of Museum Curator, a position which he held until his death in

1870. Another 33 signatories compiled the original membership of the Society (Appendix 2). Another of the original members was Hugh Lyon Playfair (1786-1861) who, along with John Adamson, were to become Brewster's chief allies in the promulgation of photography in Scotland.

The formation of such a society at such a time is of crucial importance because it provided a ready made forum for the dissemination of scientific information to those minds most likely to be receptive to such material. The idea of such a society in North East Fife however was not new. The Fifeshire Literary, Scientific and Antiquarian Society had been in existence for some years, meeting in Cupar. The two societies had similar aims and a friendly rivalry developed between them. Certainly by May 1839 the two societies were co-operating on an ambitious meteorological survey of the area (102). The co-operation between the societies was formalised after a motion proposed by John Adamson (103), and not surprisingly, it was the indefatigable Brewster who was elected chief representative from St. Andrews.

Brewster had apparently received some examples of Talbot's photogenic drawings at around the same time as Faraday was presenting them in London. They are certainly acknowledged in a letter from Brewster to Talbot dated 12th February, 1839 (104). Brewster writes of showing these to Lord Gray and

> "some of my friends here who have felt a deep interest in the new art" (105).

It was possibly these drawings that were presented to the Literary and Philosophical Society on 4th March (106) since Brewster wrote in a letter of 14th March that after receiving the specimens back from Professor Forbes (to whom he had shown them with Talbot's permission) that he had

> "kept them for a few days to show to our Literary and Philosophic Society here" (107).

Unfortunately, some occurrence prevented Brewster from attending the meeting but he left provision for the secretary (Dr P. Mudie) to exhibit to the members

> "some specimens of drawings executed by Mr Fox Talbot on the photogenic paper by the solar rays" (108).

Brewster's absence however seems to have caused some confusion with regard to the drawings since the press report of the meeting records

> "Several specimens of the phosgene paper with images of buildings, flowers, lace etc. and prepared after the manner of Mr Fox Talbot were laid before the meeting, which the indisposition of Sir David Brewster prevented from being fully explained. Something on this subject is expected by next meeting which takes place on 1st April" (109).

Brewster's letter to Talbot however records that the society members

> "were much gratified by the sight of them" (110),

so presumably a favourable response to the drawings exhibited at the meeting had been conveyed to Brewster.

At the 1st July meeting, Sir David himself

> "exhibited numerous beautiful specimens of photogenic drawings executed by Mr Talbot" (111),

so there was clearly a vigorous exchange of material between Brewster and Talbot. It is interesting, although perhaps one should not infer too much from this, that the exhibits of Talbot's material often come at the end of the agenda, consist only of a line or two in the minute, and give precedence to curiosities like Brewster's exhibiting

> "a portion of the apple tree under which Sir Isaac Newton sat when he discovered the theory of gravitation" (112).

Clearly photography was not yet a dominant item of discussion but equally clear is Brewster's obvious enthusiasm for the subject which was to become

> "a source of life long interest to Sir David" (113)

according to his daughter.

Without wishing to infer that he "bull-dozed" the society, Brewster was clearly a forceful personality and one feels his powers of persuasion should not be underestimated. Henceforward, new Talbotypes were a frequent item on the agenda of the society.

At this time the interest in photography seems to have been largely passive and academic but by the beginning of 1840 Brewster is requesting a detailed method from Talbot. The Brewster-Talbot correspondence over the next two years or so reflect the struggle that the St. Andrews group were having in their attempts to duplicate the process.

As stated before, published accounts of Talbot's original process as presented before the Royal Society were available. The Philosophical Magazine published the original 31st January account which gave broad outlines of the process and its possible applications as envisaged by Talbot (Some Account of the Art of Photogenic Drawing) (114). This was followed by the much shorter paper read on 20th February which gave more technical details (An Account of The Processes Employed in Photogenic Drawing) (115).

Although the second paper admittedly does give more details, it is by no means a comprehensive guide providing the times, proportions, concentrations etc. that one would expect in a modern account of a scientific method. For example, he discusses dipping paper in a solution of common salt and goes on to say

> "I have found by experiment that there is a certain proportion between the quantity of salt and that of the solution of silver, which answers best and gives the maximum effect." (116)

Unfortunately, he gives no clue as to what this apparently critical ratio might be. He also published the 31st January paper privately under the intriguing title,

> "Some Account of the Art of Photogenic Drawing, or the Process by Where Natural Objects may be made to Delineate Themselves Without the Aid of the Artist's Pencil." (117)

It seems rather unlikely the St. Andrews group were producing prints by this method however even although the Swan Thomson Album (Vol. 2) (St. Andrews University Library)

has a paper negative of the old college of St. Salvator dated 1839-40, and one of South Street dated 1839, attributed to Hugh Lyon Playfair and annotated "one of the first photographs taken in Scotland" (118). There is however no account of such prints being shown to the members of the Literary and Philosophical Society and it seems inconceivable that, when every new mailing of drawings by Talbot is minuted, that the efforts of the members themselves would not be acknowledged. Furthermore, Brewster admits in June 1841 that

> "I have entirely failed in your calotype process, and so have two of my friends, Major Playfair and Dr Adamson to whom I communicated it." (119)

If therefore, they were unable to repeat Talbot's process in 1841, it does seem rather unlikely that they had achieved success in 1839.

It should perhaps be made clear however, that the process of which Brewster was demanding "the very alphabet" (120) from Talbot was not the same as the 1839 one. In September 1840 Talbot had made the discovery that gallic acid (a colourless, crystalline tanning derivative $C_6H_2(OH)_3COOH$) not only intensified faded images on old negatives but could produce a strong image on sensitised materials after a comparatively short exposure.

> "Three and even one seconds exposure at the window produces complete darkening (by spont.) (sic) in the G. paper... This sensitive paper takes a feeble impression, but which is speedily brought out by a second wash of G." (121).

Talbot had discovered, or at least discovered a means of exploiting, the "latent image" although he called it the latent "picture" (122). (In fairness however to Daguerre, the principle of the latent image had been the cornerstone of his process virtually from the beginning). The ramifications of this were immense; not only could the photographer now take many more pictures in a day but the greatly decreased exposure times meant that portraiture was now at least theoretically possible, a use which the previous length of exposure had rendered virtually impossible. Certainly by the following month (October) he had produced a calotype portrait of his wife Constance, the "earliest known portrait" (123) by Talbot (and presumably, ipso-facto, the earliest calotype portrait). He also found that his new variation was much more sensitive to light and the photographer therefore was not restricted to days or periods of bright sunshine in which to work. Talbot was so impressed with his new discovery that he went to the length of actually snipping out the words "gallic acid" from his notebook. Perhaps the most surprising point to be made here is that there was nothing new in using gallic acid in relation to a photographic process. The very journal which Talbot quotes from in his first paper to the Royal Society (31st January, 1839) describing Davy and Wedgwood's attempts to fix their images, contains a short paper entitled "Observations on Different Methods of Obtaining Gallic Acid" (1802) (124). Herschel also mentions gallic acid in his 1839 paper on photography to the Royal Society and the Rev. Joseph Bancroft Reade was certainly working

with gallates in 1839 - indeed much of the Talbot v Laroche patent testimony of 1854 is concerned with this point;

> "he (Reade) exposed his images to light; he put them sometimes into a camera, and sometimes under a solar microscope and as the image was developing, he worked it with a solution of tincture of galls and the consequence was that the images were fully developed" (125).

In a letter of 28th March, 1839 (to Lubbock)* Talbot recommends the use of gallic acid, which had been mentioned to him by

> "Herschel and another experimenter, so I think it must be among the best recipes yet found out" (126).

His first recorded use is in April 1839 but it was not until 18 months later that he apparently finally grasped its real significance.

In the Court proceedings of the 1854 patent case Talbot claims to be the first in

> "employing gallic acid or tincture of galls in conjunction with a solution of silver to render paper which has received a previous preparation, more sensitive to light" (127).

Although Reade was using iodide of silver and Talbot nitrate of silver, the distinction, in legal terms at least, seems a very fine one, but of course Reade had not filed a patent detailing any process therefore Talbot was not in

* Sir John W Lubbock (1803-1865) was Secretary, then Vice-President of The Royal Society. He was made an Honorary Member of the St Andrews Literary and Philosophical Society at the same time as Talbot (5/7/1841). See also Appendix 3.

infringement of any published or patented process and, as mentioned above, Talbot was experimenting independently with gallic acid so there seems little cause for suggesting that he had somehow "filched" the idea. Although it all seems a trifle confusing, the major point to be made is that although only the "big names" have filtered down to our own time as household names, there were many others independently researching relevant photographic or related processes and it may never be known just precisely what their contribution may have been either directly or as catalysts in stimulating thought in others. Although Bernard of Chartres (1130) said that the dwarf on giant's shoulders sees the farther of the two, we can perhaps claim in early photographic history, that the giant on dwarf's shoulders can see just as far. Talbot was however, also allowed to patent "iodised paper" which, according to one writer, "had been available for two years previously" (128).

Talbot's patent of 8th February, 1841 then is of interest for three main reasons:-

(1) It is the first patent of any photographic process

(2) It introduces the term "calotype"

(3) It introduces the concept of the "latent image" per se.

It is also interesting that in the patent Talbot makes a distinction between "calotype paper" and "common photographic paper" (129) (his original process), recommending the latter for taking the print from the negative. Given this distinction we can see that the term "calotype" should be used only for the original negative (as

Talbot did), or for a positive only if it had been "developed out" on calotype paper rather than printed out by sunlight. The usual print from a calotype negative was the "salt print" or "salted paper print", since Talbot's original process involved sensitising the paper by dipping in a solution of sodium chloride then coating one side with silver nitrate. These prints were often "varnished" with a solution of egg white to render a smooth, semi-glossy surface (as opposed to the matt textured surface of the original). Prints treated in this manner are now called "albuminised salt prints" Contemporaries however, appear to have continued to call the images photogenic drawings or calotypes.

Talbot must have communicated his new discovery very quickly to Brewster for in October he wrote to Talbot.

"When you have published your method I shall immediately apply it to our beautiful ruins here which are well adapted for the purpose" (130).

Interestingly enough, at the 2nd November, 1840 meeting of the Literary and Philosophical Society, Brewster exhibited a number of Daguerrotype and photogenic drawings "under the superintendance" (131) of Thomas Davidson of Edinburgh and from this and other entries it would seem reasonable to assume that Davidson had mastered the original process of photogenic drawing. He was certainly a frequent visitor to the society (being made a Honorary Member in April 1841) and presumably he could have helped the St. Andrews group with some of their technical problems, but there is no evidence of this taking place. Brewster

continued to write to Talbot however and in a letter of January 1841 acknowledging receipt of a new set of drawings, he exclaims.

"You have surely not published the precise method of executing these drawings" (132) (Brewster's emphasis). Brewster had picked up a point that was causing Talbot some consternation. Under British Law, once a patent had been registered, the patentee had six months before being compelled to reveal the details of their patented process.* Talbot however had been in correspondence with Jean-Baptiste Biot (1774-1862), a colleague of Arago at the Academié des Sciences, who informed him that Daguerre had discovered a technique of producing very short exposures. As it turned out his new method was of little consequence, merely "chlorine and bromine quick-stuff" (133) or accelerators which increased the sensitivity of the plate, but Talbot had no way of knowing that at the time. Biot had written

> "if he publishes before you, the discovery belongs to him scientifically .... in the eye of the public you could only hope to have the title of second inventor since you published later" (134).

In spite of Brewster's misgivings therefore (and one is inclined to wonder whose interests Brewster had most in mind), Talbot was compelled to disclose his method in some detail in his patent

* See Schaaf Out of the Shadows, p116 Passim for Talbot and Patents, ALSO
N. Davenport, The United Kingdom Patent System : A Brief History (Havant, 1989)

> "Photographic Pictures A.D. 1841 No. 8842.....Within England, Wales and the Town of Berwick-Upon-Tweed." (135)

Talbot also apparently acceded to Brewster's request since a letter of 5th May, 1841 stated,

> "I have received your letter and will take special care that your process remains a secret till you wish it made known. I shall have great pleasure in trying it when you have leisure to communicate me the other half." (136)

The "other half" duly arrived ten days later and Brewster again promised to keep it secret but within a few weeks Talbot had disclosed the details to the Academié Francoise and the Royal Society. A full account was then published in the Literary Gazette of 12th June, 1841. This may well have been a draft of the paper he sent to Brewster - he certainly sent a copy of the Gazette to Herschel on publication. There were clearly still problems however with Brewster's understanding of the process. In June he wrote that he still does not know how to make positives. In July,

> "I shall wait anxiously for your calotype instructions. We need the very alphabet of the art." (137)

Presumably Talbot did send further details - at the July meeting of the Philosophical Society Brewster exhibited

> "many fine specimens of Mr Fox Talbot's calotype or photographic pictures and explained the process by which they were executed" (138).

On 26th July, Brewster wrote to Talbot "I regret to say that I have entirely failed in your calotype process, and so have

two of my friends, Major Playfair and Dr Adamson to whom I communicated it. Our Professor of Chemistry, Mr Connell, assisted Major Playfair and me in our first attempts. But we could get nothing like a good picture. Major Playfair has since tried it repeatedly and patiently by himself .... and Dr Adamson who is a good chemist and successful with the Daguerrotype has also failed ..." (139).

N.B. The area covered by this chapter is also dealt with in the following examples:

A.D. Morrison-Low, "Dr John and Robert Adamson : An Early Partnership in Scottish Photography", Photographic Collector 4, 1983, pp. 199-214

G. Smith, Disciples of Light : Photographs in the Brewster Album, Malibu, 1990

S. Stevenson, David Octavius Hill and Robert Adamson : Catalogue of their Calotypes Taken Between 1843 and 1847 in the Collection of the Scottish National Portrait Gallery, Edinburgh, 1981, Introduction

D.B. Thomas, The First Negatives, London, 1964

For Sir David Brewster and Photography see:

[Sir David Brewster], "Photogenic Drawing or Drawing by the Agency of Light", Edinburgh Review 76 (1843), pp. 309-44

[Sir David Brewster], "Photography", North British Review 7 (1847), pp. 465-504

Brewster, "Photography", Encyclopaedia Britannica, 8th Edition (Edinburgh 1858), 21 Vols, XVII, pp. 544-554

A.D. Morrison-Low, "Sir David Brewster & Photography", Review of Scottish Culture 4 (1988), pp. 63-73

TOWARDS SUCCESS - 1841 - 1842

It seems reasonable therefore on the strength of the two communications above to assume that the first serious attempts at calotyping in St. Andrews were undertaken between June and July of 1841. The fact that 3 independent attempts, Brewster/Playfair/Connell; Playfair alone and John Adamson had all failed seems to suggest that Talbot's method had been inadequately communicated but Schaaf makes the point that

> "amateurs who tried to follow Talbot's initial procedures ... were more often than not frustrated by incomplete understanding of the details of the process... virtually no one worked from the sparse instructions that Talbot himself had disseminated" (140).

It certainly seems unlikely that scientists and chemists like Brewster, Connell and Adamson were incapable of following a comparatively simple scientific method, so, assuming that Talbot did not leave out some vital step in his procedure, it is possible that the problem lay in the lack of a scientific standard for chemicals and reagents. The lack of a defined standard of purity for a given substance meant that there could be a critical difference in materials ostensibly the same. Not only could the substances differ, but the methods of preparation were just as likely to create problems. The celebrated Parisian scientist Antoine Laurent Lavoisiér (1743-1794) had been troubled by lack of a standard of purity for water as far back as the 1760's and he was aware that the apparatus used

to conduct experiments and tests or produce substances, could itself contribute rogue elements which could influence the result. It was not however until 1888 that the first "guaranteed pure reagents" (141) were advertised by C. Krausch of the German chemical and pharmaceutical firm of E. Merck and published in "Die Prufung des Chemischen Reagentien auf Reinheit" (The Testing of Chemical Reagents for Purity). It was not, for example, until the first decade of the 20th century that pH values could be measured accurately (and not until 1935 did the first direct read pH meter appeared).

It is entirely possible therefore that the chemical solutions that the St. Andreans were using, although ostensibly the same as Talbot's were quite different in their chemical constitution (or at least different enough to give dissimilar or unexpected results). It is hardly surprising then under such circumstances that neither Adamson nor the others could exactly reproduce Talbot's results. The only solution to such a problem would either be to get their reagents ready made from Talbot (not terribly realistic or practical at this time), or to use Talbot's chemistry as a guide or starting point to be adapted to local conditions rather than as an absolute canon. Adamson and Playfair must certainly have persevered throughout August and September since, at the October meeting of the Literary and Philosophical Society, it is minuted that "a number of very fine Daguerreotype and calotype drawings were exhibited by Major Playfair and Mr Adamson" (142). Clearly however, they were not entirely

happy with their results since, in a letter to Talbot of the 14th October Brewster states that

> "My two friends will never give up <u>till they master</u> the process" (143) (author's emphasis).

It would also appear that the drawings exhibited by Playfair and Adamson were calotypes in Talbot's sense of paper negatives since a letter of Brewster's in November states,

> "My friends here have not yet tried your positive process. It is the positive copies they cannot fix." (144)

It is not quite clear here what Brewster means - if they have not yet <u>tried</u> the process, how do they know that they cannot fix the positives? Pedantry aside, the group were clearly having problems with the second part of the process.

Talbot continued to send photogenic drawings to Brewster and the minute of the November meeting of the Literary and Philosophical Society records that

> "Sir David Brewster exhibited to the Society a great number of photogenic drawings executed by Mr Fox Talbot and stated that they are now known by the name of talbotypes instead of calotype, the former name" (145).

It would however be misleading to think that Talbot was only, or mainly, corresponding with Brewster at St. Andrews. At the same time he was also corresponding with Herschel on photo-chemical matters. His aunt, Lady Mary Cole, in a letter of 4th October, 1841 (146), acknowledged receipt of some calotypes. Her daughter Emma, Talbot's cousin was married to John Dillwyn-Llewelyn who became Wales' first

known photographer and it is possible that, being family, he corresponded with John.

He also corresponded with, and sent prints to, a father and daughter team in Kent (John George Children and Anna Atkins). Children was the Chairman at the Royal Society meeting of 31st January when Talbot announced details of his process and his daughter, Mrs Atkins* was the botanist who eventually used Herschel's cyanotype process to document algae. (Photographs of British Algae-Cyanotype Impressions, 1st Part October 1843.)

Children had written to Talbot on 14th September, 1841, on receipt of a packet of calotypes that,

> "... my daughter and I shall set to work in good earnest till we completely succeed in practising your invaluable process. I am also extremely obliged to you for introducing me to Mr Collen - from who I have received much valuable information. I have sat to him for my calotype this morning. I have also ordered a camera for Mrs Atkins from Ross." (147)

This small extract is interesting for a number of reasons:-

(1) It shows that there were others besides the St. Andrews group determined to master the calotype process.

(2) It proves that Henry Collen (1800-1875) had mastered the calotype process from an early stage. (Collen was a painter of miniature portraits who had become the first calotype licensee under

* See also L. Schaaf, Sun Gardens : Victorian Pictograms by Anna Atkins, New York, 1985

Talbot's patent.) He had only opened his London studio in August, so Children was certainly an early customer for a professional calotype portrait.

(3) It suggests that Ross* (presumably A. Ross the lens and scientific instrument maker) was already producing cameras as a consumer item.

Also, they, like the St. Andrews group, were having difficulty in achieving complete success with the calotype process.

By November 1841, a third "ardent disciple" (148) was working with the group. This person is named by Brewster as Mr Furlong. William Holland Furlong is not a well documented figure.** He is in St. Andrews 1840/41 as a student in one of Brewster's classes and as assistant to Connel (Professor of Chemistry). According to Brewster he had mastered the first part of the calotype process in Ireland but,

"... like Dr Adamson has failed in fixing the positive Talbotype" (149).

By March of the following year (1842) they apparently still could not control the process and Furlong corresponded directly with Talbot requesting more details and stating that

"I have never been able to preserve the positives without making them a disagreeable red colour, very unlike the beautiful lilac of your positive pictures." (150)

* See R. Kingslake, A History of the Photographic Lens, London, 1989, p. 271 (also discusses Petzval and Davidson)

** See G. Smith, "W. Holland Furlong, St. Andrews and the Origins of Photography in Scotland", History of Photography 13 (1989), pp. 139-143

Furlong seems to have established a friendly relationship with both John and Robert Adamson. A print by John dated 1842/43 shows Robert Adamson, Furlong and an unidentified figure standing on a bridge near the family home at Burnside (Plate 9). One is compelled however to rely on the annotations for these identifications since the figures are really too far away to be able to be distinguished clearly. According to Smith the annotations are thought to be by Brewster himself "over an extended period" (151) and presumably Brewster was told who the figures were by Adamson. It is intriguing that the third figure remains anonymous but perhaps Brewster just forgot! (It could of course be Adamson's brother Alexander who had taken over the farm after their father's death in 1841 and given the fact that the bridge is literally at the bottom of the farmhouse garden. The bridge itself was washed away in the severe flooding of 1916.). In a letter of 1856, Furlong writes of his "friend and co-experimentalist, Dr Adamson of St. Andrews" (152) in which he credits Adamson with the discovery that pre-exposure to sunlight gives a "wonderful improvement" in the quality of even the best iodised paper. The Adamson/Furlong relationship was somewhat short lived however and there appears to be no further mention of Furlong until John Adamson read a letter from him to the Literary and Philosophical Society meeting of 3rd April, 1843.

"Mr Adamson read a letter from Mr W.H. Furlong relative to a new mode of preparing iodised paper for the calotype" (153). There is no clue as to where this letter came from

but it does seem likely that he had returned to Ireland since he writes from Dublin some years later. Furlong appears to have left St. Andrews under something of a financial cloud. At the same time as Adamson was reading his letter to the Society, arrestment warrants had been left with Furlong's landlady, Elizabeth McFarlane and his employer, Professor Connell. The warrants were delivered in absentia, the officer claimed "because I could not apprehend himself personally" (154).

Apparently Furlong had run up a bill of £10.35-5d with local draper George Langlands for such items as a grey Glengarry bonnet, India rubber braces, silk scarf and fur-lined gloves but had absconded without paying. We can therefore conclude that Furlong may have been dishonest but he was certainly a sharp dresser. It is interesting to note that the draper in question, George Langlands, went bankrupt in 1848 and emigrated to Australia from where he wrote a rather bitter letter of his time in St. Andrews to the Fife Herald in 1852 (155).

It is also clear that the "partnership" failed to solve the problem of the positive calotype. At the same time as Furlong was writing to Talbot requesting more details (March 1842), Brewster was writing to Talbot that

> "Mr Collen has been so kind as to send me one of his calotypes which has astonished me and all who have seen it. Dr Adamson, to whom I have shown it, despairs of ever coming near it." (156)

Although complete calotype success seemed to be eluding the group at this time, Playfair, at least, seemed to have

been enjoying continuing success with the Daguerreotype. As stated before, Thomas Davidson had been a frequent visitor to the Society and had exhibited Daguerreotypes to them as far back as November 1840 (157). Playfair and Davidson seemed to have formed something of an alliance, exhibiting together to the Society. Although Brewster had written that Adamson was "successful with the Daguerreotype" (158) he is never specifically mentioned as exhibiting any to the group, seemingly devoting his energies to the mastering of the calotype positive. Playfair, on the other hand, seemed to have developed quite a fondness for the Daguerreotype while establishing something of a love/hate relationship with the calotype. In October 1841 he was quite optimistic,

> "... all agree that in a short time the Talbo-type will supplant the Daguerrotype" (159),

but by August of the following year he wrote in a note to Brewster

> "... I regret to say that the Daguerreotype must have infinitely the ascendancy unless this art is more easily obtainable. With the other I never have a single failure - with this I never have anything else" (160).

In January 1842, Playfair, following a visit to London in November, exhibited to the Society

> "several beautiful Daguerreotypes executed by Mons. Claudet of the Adelaide Gallery, London by his new and rapid photogenic process" (161).

Antoine-François-Jean Claudet had learned the process from Daguerre himself (and held an individual licence from

Daguerre independent of Beard's purchase of the patent) and opened his studio in June 1841. The images shown by Playfair included :

> "One view of St. Martin's Church taken on a dull wet day.
>
> One view of a ball of alumine brought to white heat by oxy-hydrogen blowpipe and used to provide light - remarkable for its delicacy.
>
> One very extraordinary production, taken about instantaneously by M. Gaudin's new process in which he exposes the iodised plate to the vapour of chloride of iodine or bromine" (162).

(Marc Antoine Gaudin (1804-1880) was a Parisian Daguerreotypist and as well as his technical innovations Gernsheim credits him as the originator of the phrase "... watch the dicky bird" in order to attract a child's attention to the camera (163).

Clearly the Daguerreotypists were keen to expand the parameters of their process, utilising the new found sensitivity of their emulsions to take advantage of dull weather photography as well as experimenting with sources of artificial illumination. It was also Claudet who took advantage of the emulsion's lack of sensitivity to the red end of the spectrum to introduce the red safe lamp for darkrooms. At the February meeting Playfair exhibited to the Society

> "....a variety of portraits and group of ladies and gentlemen in St Andrews taken by himself since last meeting by The Daguerreotype Process ...." (164).*

* The fate of these Daguerreotypes is at present unknown. No examples exist in St. Andrews University Library collections.

He also demonstrated a device sent to him by Claudet which showed the effect of different colours on a plate through the camera,

> "... thus affording a guide to dressing to sit for their portrait" (165).

This was presumably some sort of filter which reduced colour to monochromatic tones. Since the Daguerreotype was virtually insensitive to all but blue or white it meant that the female sitter should avoid reds or greens since they would photograph as almost black. Male costume, usually dark anyway, would reveal more detail if greys or checks were worn, rather than black. The usual gold-chloride treatment further darkened shadow areas although it enhanced whites and highlights in the portrait. Claudet's attention to such details and innovations serves to emphasise his professionalism and inate regard for his art rather than seeing it as purely a means of making a quick fortune by processing as many sitters per day as possible, regardless of quality. His professional attitude contrasts rather markedly with the first Scottish Daguerreotypist James Howie whose sitters

> "had to climb three flights of stairs, and then by a kind of ladder reached a skylight ... the operator used to take the sitter by the shoulders and press him down with the observation - "There! now sit still as death" (166).

However, although Playfair was still despairing of succeeding with the calotype process in August 1842, it would appear that sometime during spring/summer 1842 John

Adamson finally mastered the process either by himself or with his brother Robert's help. The brothers were almost certainly collaborating closely during this period as Brewster wrote to Talbot in August 1842 that he would be talking with "Mr Adamson (Robert) who has been well drilled in the art by his brother. (John)" (167). It is quite possible that John discovered what had been going wrong when he was compelled to demonstrate the entire calotype process, step by step, in elementary fashion from basic principles in order to teach it to his brother Robert. Further evidence of success at this time may be inferred from the line in Brewster's letter that Robert " ... is willing to practise the calotype in Edinburgh as a profession" (168). It is not very likely that Robert would be inclined to view the process as having any future career prospects if they were still encountering the sort of problems that were besetting the group in March. It is probable that the first calotype portrait in Scotland was taken around this time by John, although the evidence is not conclusive. This portrait is in the Edinburgh Adamson album (169) and is annotated as follows by Adamson himself.

"This negative calotype was taken in the spring of 1840 by Mr Fox Talbot's process and before he had made it public - he explained the process in a letter to Sir David Brewster and this picture was obtained by following the directions and using a temporary camera-obscura made with a common small lens, an inch and a half in diameter - this is no doubt the first <u>calotype</u> (Adamson's emphasis) portrait taken

in Scotland. The sitting lasted nearly two minutes in bright sunshine" (170).

It may well be that this was indeed the first calotype portrait taken in Scotland but there is certainly room for doubt about the date. The annotations are later additions and the given date 1840 has apparently been changed to this from 1841 and then May 1840 has been added under the print. This does little to inspire confidence in the veracity, or at least accuracy, of Adamson's dating and it seems unlikely that either date can be trusted. We should also be wary of the statement that this portrait was taken by Talbot's process "before he had made it public". Talbot "went public" as it were in February 1841 but it was only in October of the preceding year that he himself had succeeded in producing a calotype portrait (of his wife Constance). There is also the point that until October 1841, the only photogenic drawings displayed to the Literary and Philosophical Society had come from Fox Talbot himself. Only at the 4th October meeting is any mention made of Adamson himself having produced his own calotypes. It should also be remembered that even in June 1841 Brewster was writing to Talbot about still not being able to make positives and needing the "very alphabet of the art" and Adamson himself in Brewster's 26th July (1841) letter admitted that he has "... failed, and says that the paper when ready for the camera became black in the dark". In light of this, his datés of 1840 or 1841 seem rather optimistic.

If we accept at least, that the month is correct, then a much more likely date for the print is May 1842. Adamson's claim to have taken the first calotype portrait in Scotland however is almost certainly true. There is certainly no evidence to the contrary and if any other Scot had succeeded before him using Talbot's method he remains so far undiscovered.

THE WAY FORWARD - 1842 - 1850

By November 1842, things seemed to be going well for the St. Andreans. The Philosophical Society Minute reports that, "Major Playfair, John Adamson, and David Brewster exhibited to the Society some beautiful specimens of photography" (171). The Fife Journal expands upon this.

"The calotypes belonging to Sir David Brewster were partly executed by his son, Sir Henry Brewster and partly by himself. Sir David stated to the Society that he was satisfied that the art of photography had been carried to a greater perfection in St. Andrews than any other town in Great Britain. He had lately an opportunity of examining the most successful pictures executed by the Daguerrotype and calotype process in London, Manchester and elsewhere and he had no hesitation in saying that some of these made by Major Playfair were superior to any he has had an opportunity of seeing." (172)

Manchester was the venue that summer for the 12th Meeting of the British Association for the Advancement of Science and Brewster had attended as well as Herschel and

Talbot (173), and it seems unlikely that they would miss this opportunity to discuss their comparative progress in the photographic art.

Captain Henry Craigie Brewster* (1816-1905) was Brewster's youngest son and an honorary member of the Literary and Philosophical Society. We learn from a letter written to Talbot from Brewster (174) that Henry was on leave from his regiment in Ireland in the summer of 1842. He is also mentioned in Brewster's article for the Edinburgh review.

".... we have now before us a collection of admirable photographs executed at St. Andrews by Dr and Mr Robert Adamson, Major Playfair and Captain Brewster" (175). It is not documented whom Henry worked with that summer to learn the calotype process but, bearing in mind Playfair's disillusionment with the calotype at this time it is unlikely that he would have found much inspiration there. According to Brewster's daughter,

> "Henry, when at home on leave, practised it under his (David Brewster's) superintendence" (176).

Earlier, however, she had written,

> "He (David Brewster) made many experiments in the art, though not able to give sufficient time to master its difficulties" (177).

His most likely tutors then were the Adamson brothers who had seemingly finally succeeded, and a portrait of John in one of the Edinburgh albums (178) by Henry dated September 1842 may support this submission, but it is entirely possible of course that he learned something from them all.

* See Smith G. "A Group of Early Scottish Calotypes", Princeton University Library Chronicle 46 (1984), pp. 81-94
Smith G., Sun Pictures in Scotland (Ann Arbor 1989), pp. 20-23

The differing attitudes and successes of the group however do tend to suggest that they were experimenting independently of each other at this time. Certainly by May of the following year (1843) it is minuted that,

> "Sir David Brewster exhibited two series of calotype portraits, the one executed by Mr Henry Collen, London, the other by Captain Brewster of the 76th Regiment." (179)

Henry continued to calotype on return to his regiment in Cork and several of his portraits are contained in the Brewster album held in the J. Paul Getty Museum (180). It is possible that these were the portraits shown at the May meeting of the Society. According to his father, Henry seems to have been on enthusiastic experimenter, oiling negatives for greater transparency and producing a self-portrait which John Adamson regarded as "... the best portrait done here" (181), but after May 1843 there are no more submissions by Henry to the Society and the majority of his prints in the Brewster album date from approximately 1843 with possibly two from 1845. Based on this evidence at least, it would appear that Henry's photographic career was rather brief. His timing however was impeccable; his long leave occurring at the very time when Adamson had solved the calotype problem.

In April 1843, Adamson read a letter to the Society from William H. Furlong,

"Relative to a new mode of preparing iodised paper from the calotype" (just as the bailiffs in St. Andrews were attempting to serve warrants on him). Clearly Furlong was

still pursuing his own research in Ireland and indeed he apparently was still working at, or at least interested in, the calotype process, since he wrote the long letter to "Photographic Notes" referred to previously.

It is not clear what Furlong and Adamson had been working on but it would appear that John, either by himself or with Robert or Furlong had been experimenting with different methods of fixation. In a letter to the organisers of the 1855 Photographic Exhibition in Glasgow (to coincide with the meeting there of the British Association) Adamson had written

> "....I may mention that the most important specimens are poor calotypes [Adamson's emphasis] but they were taken and fixed with ammonia in 1842 and as they show no sign of fading after nearly 13 years they may prove interesting at the present time" (182). (These pictures will be discussed later.)

Since the letter was dated 31st August, 1855, these prints, if Adamson's dating is correct, must have been made about the summer of 1842. Interestingly enough, Talbot, in his letter read before the Royal Society in February 1839, had written in respect of fixation of,

"... having tried ammonia and several other reagents, with very imperfect success..."

It must have been gratifying for Adamson to succeed where Talbot had failed instead of vice-versa.

In May 1843 however, the brief partnership of the Adamsons was brought to an end when Robert left for Edinburgh (apparently with John's cameras) (183) to set up

his studio on Calton Hill. A number of their joint works still exist in St. Andrews, Edinburgh and elsewhere. The previous November (1842), John Adamson had written to Talbot,

"Dear Sir, I [have] taken the liberty of sending you a few calotypes executed by myself and my brother in testimony of the great pleasure we have derived from your discovery. I hope they will not be devoid of interest from the objects which they picture whatever may be their rank as species of the art" (184). This was a collection of 18 small calotypes, mounted in the so called "Tartan Album", which reflected the multiplicity of subjects that one would expect of an experimenter attempting to establish the parameters of a new process, local scenes, family and friends etc. in much the same way that the more serious photographer of today tests out a new camera; by putting a film in it and attempting to discover its strengths and weaknesses by photographing a range of subjects under varying conditions. Although more complex and philosophical suggestions have been proposed as the rationale behind these images (185), such interpretations seem unnecessarily elaborate and not at all in keeping with what little we can speculatively ascertain about either Adamson's character. In relation to this same album, Brewster had written to Talbot on 2nd November, 1844,

"Mr Adamson was here today with his little book of calotype gems for you but he still requires to get a good positive one of me before he can send it." (186)

Whether this "good positive" was elusive because of technical difficulties or Brewster's vanity is not clear but he obviously succeeded since the album was sent a week later complete with Brewster's portrait as the first plate.

In many ways it is unfortunate that the brothers' liaison was so short since the achievements of Robert with D.O. Hill tend to eclipse previous events. Although Robert often seems to be relegated to the task of "just" taking the pictures under Hill's "artistic direction", it should be remembered that Robert had no idea that he would be working with a partner, let alone Hill, when he went to Edinburgh and one feels that Robert must have had some ideas of his own with regard to posing and composition. After all, his brother John, from whom he had learned his craft, displayed on innate sense of balance in his pictures and his portraits especially demonstrate a comfortable rapport between photographer and photographed. His protégé, Thomas Rodger displays, and often surpasses this same ability to produce a seemingly "off the cuff" portrait although one suspects that a degree of "facilitas" (the art that conceals art) was behind these apparently relaxed images. Although there is inevitably a degree of subjectivity here, it should perhaps be pointed out that Adamson had no tradition of photographic portraiture to tap into for poses to amend and adapt and the degree of intimacy in his portraits seems therefore all the more remarkable. This aspect of his work is discussed more thoroughly in the Technology and Artistry Section.

It is unfortunate that Robert apparently never committed his account of events to paper (in fact there are

no known writings of any sort by Robert and precious few by John), but since there is no recorded report of any dissention between himself and Hill presumably the arrangement suited him well enough. However, anyone looking at the cover of the 1848 volume of photographs, "100 calotype sketches" by D.O. Hill, R.S.A. and R. Adamson, where Hill's name appears first and in letters twice as large as Adamson's, would certainly assume that Hill was the senior partner. One is also tempted to speculate that for many there must be some difference in artistic merit between a print produced by someone with R.S.A. after their name and one produced by an enthusiastic amateur like John Adamson. Although such differences may be more perceived than real, it is interesting that in the case of Hill and Adamson the artistic and technical components of photography were separated and it might be argued that, since the purely technical problems of photography had by now been largely solved, it was now up to the artists to shape its future development.

However this argument would tend to suggest that technical proficiency precludes artistic sensibility and this is demonstrably not the case, since many of the pioneer photographers of the 1840's and 1850's, such as Benjamin Brecknell Turner (1815-1894) (whose "beautiful specimens" were much admired by Furlong) (187) or Francis Frith (1822-1898), were able to produce technically well executed, while at the same time, strongly artistic images displaying a fine sense of composition, balance and spatial awareness. Some with an artistic background, such as Oscar Rejlander (1813-

1875) or his follower Henry Peach Robinson (1830-1901) produced images which, although not without skill or interest, were in many cases little more than paintings a la calotype (or collodion). Of course, this pictorial quality may be regarded by some as a strength - certainly the relationship between the painter and the photograph established by D.O. Hill in the early days of photography was to prove a permanent one. This symbiosis was noted in John Adamson's article on photography in 1849, in which he wrote,

".... when the skill of the artist in arranging the subjects is combined with dexterity in the photographic manipulation, no painter's hand can compete with these productions of nature herself in the fidelity and power of their expression. We have seen Talbotypes produced jointly by the late Mr Robert Adamson and Mr D.O. Hill of Edinburgh which warrant these remarks, and have obtained this tribute from the greatest among the painters of the present day" (188).

In some ways however, it is unfortunate that the Hill/Adamson partnership is so dominant in the early history of photography in Scotland since they rather tend to eclipse other achievements like John Adamson or John Muir Wood, although it is to be hoped that recent research in such areas will redress this imbalance and produce a more complete picture of early photography in Scotland.

After Robert's move to Edinburgh, the next mention of photography in the Literary and Philosophical Society's minute book is in February 1844 when

"Dr Adamson exhibited some beautiful calotypes executed by his brother Mr Robert Adamson" (189).

This would appear to be the only instance that Robert's work was exhibited to the Society. Indeed, as far as the Society is concerned, the novelty perhaps having worn off, photography takes something of a back seat for a few years. In April of 1845 Brewster sent,

"36 beautiful calotypes executed by Mr Fox Talbot for the inspection of the members of the Society" (190)

but the calotype is not mentioned again until 4 years later, in April 1849.

In the interim period, Brewster seems to have diverted some of his energy towards improving or inventing new variations of the stereoscope. The history of his instrument is a formidable subject in its own right but since John Adamson is probably the originator of the first calotype stereoscopic portrait it must be set in some sort of historical context.

The stereoscope works on the principle that each eye sees slightly different images (owing to the distance between them) and that if two separate images are composed as if seen through each eye individually and then reunited, an apparent 3-dimensional view will result. Although the basic principles of binocular vision were known in antiquity, the earliest known apparent stereoscopic image was thought to be a pair of drawings of a figure on a stool

"with a compass in one hand and a string in the other" (191).

These were allegedly drawn by Jacopo Chimenti da Empoli (1554-1640). The slight differences in these drawings, according to Brewster and verified by Professor Tait, could only be accounted for in the context of an attempt to produce a stereoscopic image. Recent research however suggests that these drawings are almost certainly not early stereoscopy.* In the 19th century the first proposal to construct an instrument for, "writing two dissimilar images" (192) was made, according to Brewster, by a Mr Elliot of Edinburgh University in or before, 1834. Apparently Elliot had produced an essay on the subject as far back as 1823 but it was not until 1839, in preparation for a paper to the Polytechnic Society in Liverpool that,

"He was thus induced to construct the instrument which he had projected, and he exhibited to his friends, Mr Richard Adie, Optician, and Mr George Hamilton, Lecturer in Chemistry in Liverpool, who bear testimony to its existence at that date." (193)

Elliot's stereoscope however, contained neither mirrors nor lenses and was merely a box which contained a hand drawn landscape on glass at three receding distances from the viewer. Later attempts by Elliot seem unnecessarily complex, for example, the "Telescopic Stereoscope of 1856" (194) in which the right eye saw the left picture and vice-versa; and a device which he constructed to unite large images (including two large 10 x 12" landscapes by Wilson of Aberdeen) (195). Although he later stated that,

* Personal Communication by Professor Martin Kemp, Dept. of Art History, University of St Andrews

unknowingly, this had merely been a slight variation on Brewster's design (196).

Although others, for example, Faye, Claudet, were also working on stereoscopy, the other main figure involved was Charles Wheatstone (1802-1875). He had exhibited his reflecting stereoscope, using two angled mirrors, at the British Association meeting in Newcastle in August 1838. Some years later, an acrimonious exchange of letters in the columns of the "Times" between Wheatstone and Brewster commenced, disputing the origins of the stereoscope. Brewster himself was not claiming to be the originator of the stereoscope; he wrote:

"I consider Mr Elliot as an independent inventor and constructor of the stereoscope" (197) and it was this assertion of priority which apparently upset Wheatstone. In reply to an article in the "Times" in 1861 Brewster repeated, "... I am not the discoverer of the stereoscope. I am only the inventor of the Lenticular stereoscope now in universal use." (198)

Brewster demonstrated his lenticular stereoscope (which used lenses instead of mirrors) to the British Association in 1849.* This instrument had been made by George Loudon,** an optician in South Union Street, Dundee, one of several he had constructed for Brewster, and, after "... endeavouring in vain to induce opticians... to construct the Lenticular Stereoscope, and photographers to execute binocular pictures for it" (199) Brewster took one of Loudon's instruments to

* D. Brewster, <u>The Stereoscope</u>, London 1856, p28

** See Clarke et al, Brass and Glass, A History of Scientific Instrument Making in Edinburgh, Edinburgh 1989, pp. 146-149
A.D. Morrison-Low and J.R.R. Christie (Ed), Martyr of Science, Sir David Brewster 1781-1868, Edinburgh 1984, pp. 62, 98 & 99

N.B. For further detail on Brewster and Stereoscopy, see:

B. Bowers, Sir Charles Wheatstone F.R.S. 1802-1875, London 1975
David Brewster, "Description of a Binocular Camera", Report of the British Association for the Advancement of Science, 1849, Pt II, 5, London 1850
David Brewster, "Account of a Binocular Camera", Transactions of The Royal Society of Arts, 3, 1851, pp. 259-264
[David Brewster], "Binocular Vision and the Stereoscope", North British Review 17, 1852
A.T. Gill, "Early Stereoscopes", The Photographic Journal, 109, 1969
O.W. Holmes, "The Stereoscope and the Stereograph, Atlantic Monthly, Vol. 3 (reprinted in B. Newhall (Ed)), Photography : Essays and Images, New York, 1980
N. Wade (Ed), Brewster and Wheatstone on Vision, London, 1983
C. Wheatstone, "On Some Remarkable and Hitherto Unobserved Phenomena of Binocular Vision", Philosophical Transactions of the Royal Society of London, Vol 11, 1838 (Cont. Vol. 14, 1852)

Paris where two Parisian opticians, M. Soleil and M. Duboscq immediately set about the construction and sale of the instrument. According to Abbé Moigno, the instruments were,

"constructed with more elegance, and even with more perfection that the original English (Scotch) instruments..." (200).

After Queen Victoria had been presented with one of these instruments by Brewster during the Great Exhibition of 1851 its popularity was eventually assured. In 1854 George Swann Nottage founded the London Stereoscopic Company which, by 1858, could advertise a stock of over 100,000 views for the instrument. According to Brewster, stereoscopes were also constructed in St. Andrews although, according to the Rev. Robert Graham's account (published in 1874),

"The first stereoscope with which he experimented was a clumsy, ill made thing, somewhat like a demented ger-glass which some unhandy tine-smith in St. Andrews had made for him." (201) Certainly, by 1857, the citizens of St. Andrews could have

"at Mr Downie's photographic establishment, West end of Market Street., Portraits executed in a superior manner for the stereoscope which everyone should inspect before having their portraits taken." (202)

By this time, of course, a large variety of custom made binocular cameras were in existence to support the demand for stereoscopic views.

However, although Brewster was working on his stereoscope and the Literary and Philosophical Society minutes are rather quiet in the mid 1840's as regards

photography, this should not be taken as any indication that individual enthusiasm had waned. Brewster had contributed his lengthy and wide-ranging article on photography to the Edinburgh Review in 1843 and at the Cambridge Meeting of the British Association in June 1845 he produced a short paper entitled "An Improvement in the Method of Taking Positive Talbotypes (Calotypes)" in which he describes a method of using glass or paper as diffusion screens in order to produce a portrait free of the black specks

> "which destroys the softness of the picture, and in portraits gives a disagreeable harshness to the human face" (203).

Although the report states that Brewster,

> "...exhibited specimens of portraits produced in this manner..."

he apparently chose not to show these to the St. Andrews Society. It does evince however that Brewster was still interested in experimenting with and improving the calotype process.

In May 1843, Adamson was one of a number of gentlemen (19) who, "after a severe and lengthened examination obtained the degree of M.D. at our University" (204) Mr Adamson thus became Dr John Adamson, M.D.

A large number of calotypes from this period, portraits and landscapes, can be found in the two Adamson albums in the National Museums of Scotland in Edinburgh (T 1942.1.1 and T 1942.1.2). The quality is very varied, from well defined images to mere faded outlines and this would tend to suggest that Adamson was still experimenting with a variety

of fixing techniques in the early 1840's. For example, one group (T 1942.1.1.23) is annotated "Taken in 1842 - fixed by ammonia. The above have been in a photograph album for 12 years". These images unfortunately have now faded almost completely. Other examples, however, also fixed by ammonia have survived quite well. Presumably the chemist in Adamson dictated that he should try a number of experimental variations on the theme of fixation but without detailed notebooks we have no way of knowing which procedure keeps prints fresh after 150 years while others fade to naught.

As stated before, things seem to have been quiet as regards photography in St. Andrews from 1844 until 1849 if exhibits to the Literary and Philosophical Society are any guide. We can probably assume that some of the undated calotypes originate from this somewhat undocumented period. We must also assume that Adamson had been spending some time researching his article on photography for Chambers Information for the People published in 1849. This is a fairly substantial piece of work of around 7,000 words and well detailed with practical advice. Although no author is given, Adamson's obituarist credits him with the authorship of this article (205). Absolute confirmation of this however, and a date, is provided by William Blair, a student of Adamson's who recorded in his diary on the 20th March, 1850.

"Dr Adamson took two views - one of the castle, another of the square tower by means of the camera obscura. The process for taking views by means of the camera is contained in No. 96 of the "Information for the People" written by Dr

Adamson." (206). The day before he had recorded that "Dr Adamson gave an account of the calotype process and the manner of preparing iodised paper. Fisher on optics" (207).

So, presumably the outing was an opportunity to put theory into practise. Blair's diary, as well as giving a fascinating account of his period of St. Andrews University also provides an indication of the subjects and frequency of Adamson's lectures during Connell's absence.

Robert's illness and death in 1847-48 must also have affected John's commitment to photography, and there is some evidence that after Robert's death John had to arrange some sort of financial settlement with D.O. Hill as regards the business in Edinburgh (208).

Although Adamson's obituary in the Edinburgh Medical Journal states that

"... the early death of his brother ... had almost decided Dr Adamson's profession as a photographer", it goes on to state as a reason why this did not happen that,

".... the deaths of Drs Briggs, Mudie and Bruce, and the removal of Dr Thomson to Australia opened a wider field of medical practice and he resolved to stay in St. Andrews" (209).

However, since Dr Thomson went to Australia around 1837, and Drs Briggs*, Mudie** and Bruce*** died in 1840, 1850 and 1836 respectively, this does not seem to constitute a compelling argument. The more likely reason is that

* Fife Herald 23/7/1840
** Fifeshire Journal 11/7/1850
*** Fife Trades & Professions (1820-1970) Vol 2 St Andrews (St Andrews University Muniments)

Adamson was first and foremost interested in medicine, a doctor first and a photographer second. If indeed he did say that,

"...if he had sought for wealth he should have taken his brother's place with D.O. Hill in 1844" (210).

One suggests that it was a remark made with his tongue firmly in his cheek.

In 1849, as stated before, Professor Connell became ill and Adamson took over as Lecturer in Chemistry at the University. His classroom assistant was Thomas Rodger (B 1833) who, according to his obituary had been apprenticed at age 14 to chemist and druggist Dr James Philps and later Dr Thomas Malcolm (217). The 16 year old Rodger consequently had two years of applied chemical experience when he worked with Adamson. There is some apparent confusion over Rodger's early career, possibly perpetuated by acceptance of his obituary. The obituary must however, be treated with some caution. For example, the obituarist wrote that, while he was working with Adamson, Rodger would help the students with their Daguerreotype plates but goes on to say that,

"While he was thus working at the Daguerreotype process, the calotype process, invented in 1840 by Mr Fox Talbot had come largely into favour and was taken up in St. Andrews with great enthusiasm" (212). The same writer also has Robert Adamson working in Edinburgh with John O. Hill.

By the time Rodger was working for Adamson however in 1849 the calotype had been "in favour" for about 8 years. As early as 1843 Brewster had written, of the calotype process, that in St. Andrews,

".... it is so general that several of our students in Theology and Philosophy are practising it for their amusement" (213).

The notion therefore of the calotype just coming to prominence in time for Rodger to take it up is unfounded. There is also some confusion regarding the much quoted scenario of Rodger's curtailed medical career.

"He accordingly matriculated in Glasgow and spent two sessions there ..." but "... on his return to St. Andrews from Glasgow was strongly advised by Dr Adamson to give up the study of medicine and to take to photography as a regular profession" (214).

It seems most unlikely however that Adamson, a committed physician, would have persuaded Rodger to give up medicine if that was what he really wanted to do. It seems much more likely that if such a decision was made then it was made by Rodger himself who may then have subsequently been encouraged by Adamson. It is also rather unclear just precisely when Rodger was supposed to be at Glasgow. There is no record of him attending Glasgow University as a matriculated student; neither does he appear as attending classes as a non-matriculated student (215). One obituary (216) suggests that he attended the Andersonian University which certainly ran medical classes. (This institution, as Anderson's College of Medicine merged with Glasgow University in 1947). Unfortunately, records for Anderson's College only exist from 1854, by which time Rodger was firmly committed to photography. Rodger certainly matriculated at St. Andrews University for the 1849-50

chemistry course and appears in the 1851-52 class-list for physiology (217).

Since he started his business in 1849 it is therefore quite evident that Rodger did not give up his studies in order to concentrate on photography until much later than his obituarist would suggest. Possibly, like many obituaries, including Adamson's, Rodger's may suffer from conflating many incidents, episodes and gossip at a distance of many years removed from the events themselves.

Whatever the true sequence of events it certainly seems that Rodger was an exceedingly busy teenager from 1847 onwards.

Thomas Rodger however, is a thesis-worthy subject in himself, but his early connection with Adamson is important and worth establishing. After all, Rodger was the second professional photographer whom Adamson had trained and helped launch on his career. Adamson's influence however, can lead to some identification problems with some prints. Although there are no known "Adamson and Rodger" prints as such, there are certainly Adamson or Rodger prints where the perpetrator is unclear. Certain similarities of style, finish and props have occasioned some speculation that Adamson and Rodger may have shared a studio but, although it is certainly possible, no incontrovertible evidence has been found to substantiate such a claim. It also seems rather unlikely that Rodger, who was attempting to make a living at the process, would have welcomed anyone taking up valuable daylight/studio time. Also, there is ample evidence that Adamson worked from home. (His houses were certainly

substantial enough to support a studio/darkroom.) He had after all been working at the process for about 10 years before Rodger came on the scene. If we look at Plate 22 which is Adamson's house in South Street in 1862 (now the Post-Office) we can see his wife sitting at the open window. In the right hand corner of the window there is what appears to be a printing frame. This was a common method of printing out (cf Plate 23), and since that side of South Street receives the sun all day it would be ideally suited to the purpose. When Adamson moved from here to No. 2 Scores he clearly still had his own studio facilities. A.K.H. Boyd wrote in 1869,

"I should have said that before the little omnibus came to carry us to Magus Muir I took Froude (James A. Froude 1818-1894 became rector of St. Andrews University in 1869) a few yards to the dwelling place of that prince of amateur photographers who had done Kingsley so well (see Plate 33). Dr Adamson was ready and in just 20 minutes he took Froude nine times. The first eight were bad: Froude looked self-conscious and not himself. But just as we were going, resigned to failure, Dr Adamson said "I have one plate more: let us try again. Froude, quite wearied sat down, never thinking what he looked like, and in half a minute we had quite the best likeness of him I have ever seem" (218).

This seems fairly conclusive evidence that Adamson not only had his studio at home but also a well established clientele of his own. Rodger and Downie, for example, were established photographers in the town but as can be seen from the plates in section two, Adamson had a steady flow of

sitters throughout the 1850's and 60's. The calotype however, by the 1850's, was becoming rather long in the tooth. Its grainy image held in paper could not compete with the clarity of a glass support and if the large percentage of collodion images exhibited at Glasgow in 1855 (discussed below) can be taken as any sort of arbiter of photographic opinion, then clearly collodion was the preferred medium. There is also the point that after Talbot's unsuccessful bid to include the collodion process in his patent (Talbot v Laroche 1854), this medium was open to all.

PHOTOGRAPHY ON GLASS

In 1847 Niépce de St. Victor had patented a process for mixing silver salts with albumen spread on a glass plate. These plates were capable of considerable resolution but the thin layer meant that the amount of silver that the albumen could hold was limited and hence the plates were very "slow" (lacking in sensitivity to light) and required long(ish) exposures thus negating their obvious appeal in producing less grainy portraits.* Interestingly, the Reverend Graham's somewhat chronologically condensed account of events at Rossie Priory has the St. Andrews group performing similar experiments in an attempt to find a more transparent carrier for the silver salts. According to him they tried coating glass with,

"... the glutinous slime exuded by snails but alas it was found that, however transparent, it had the great drawback (which most substances we tried had) - it was too easily soluble in water" (219).

He continues, "At last someone (whose name we forget) hit upon the happy idea of employing the white of an egg" (220).

It is indeed sad that Graham neglects to say when this discovery was made and is unable to say who made it or another "first" could perhaps have been claimed for St. Andrews.

His claim that,

* See B Newhall, The History of Photography, New York 1982, p59

"On the discovery being made known to Sir David (Brewster) he again visited Rossie Priory and operations with the new medium were eagerly commenced" (221) is also rather suspect since on 9th November, 1849 at the Literary and Philosophical Society meeting it is minuted "He (Brewster) also explained a new method of taking photographs invented by Niepce who used glass plates covered with a film of albumen and then prepared like calotype paper to receive the negative picture. Some beautiful specimens of talbotypes obtained by this means were laid before the Society" (222).

Adamson, in his 1849 Chambers article states, "It is to be hoped that ere long the trials, now in the hands of more than one experimentalist, will result in the use of glass plates, or some fabric more perfect than any paper at present in use" (223).

Clearly, Brewster however was acknowledging the fact that the process was Niepce's, and not some chance discovery at Rossie Priory. From Graham's detailed description however of the preparation process, it does seem certain that albuminised plates actually were used at the priory at some point. It is not stated where the images shown at the Society had come from nor what the subject matter was which, unfortunately, is usual for the Society's Minutes. Without firm identification it is very difficult to date with certainty many of the unannotated prints.

Although the albumen plate persisted to some extent into the 1860's, the more common application of albumen was in the production of albumen prints. This was a process

invented by Louis-Désiré Blanquart Evrard (1802-1872) which involved coating a thin paper with albumen and sensitising with silver nitrate prior to use. Although similar to the salted paper print of the calotype process it gave a smoother, clearer image due to the pores of the paper being filled with albumen. This was destined to remain the standard printing paper until around the turn of the century when it was replaced by the more stable gelatin print.

By 1851 then, Adamson and his contemporaries had a variety of methods to produce and finish their pictures. The Daguerreotype, the calotype which could be developed out or printed out onto iodised or albumen paper, and the albumen glass negative which could be likewise printed. Finished prints can often be difficult to tell apart. An unadulterated salted-paper print from a calotype negative will have a matt surface, a characteristically grainy appearance and will often be reddish brown in colour (although it may exhibit many different variations of hue depending on processing, toning and fading). If it has been albuminised, the highlights are often yellow instead of white. Any annotations on prints from paper negatives will be white.

Albumen paper prints also exhibited a range of hues due to toning or variations in processing procedures. The finish is usually smooth and glossy and resolution of detail is usually much greater due to the glass negative. (Although waxed-paper negatives, invented in 1851 by Gustav Le Gray (1820-1884) were also capable of considerable definition.)

Annotations on prints from glass negatives may also be white, but if viewed through a magnifying lens will exhibit cleaner edges (being written on glass). Annotations in black (other than written directly onto the print in India ink) can only come from glass negatives due to the annotation being scratched through the emulsion onto the glass. Although a strong magnifying lens can often help in identifying the fibrous nature of the salt print it is still difficult in many cases to be absolutely emphatic about the process involved, certainly for the non-expert.

On the 5th April, 1851 at the Society's meeting, "Sir David Brewster showed some beautiful pictures on albuminised glass plate" (224) but already the writing was on the wall for this rather short lived process.

For further information on identifying early photographic processes, see:

J.M. Reilly, Care and Identification of 19th Century Photographic Prints (Kodak), Rochester 1986

B. Coe and M. Haworth Booth, A Guide to Early Photographic Processes, Victoria & Albert Museum, London 1983

G. Baldwin, Looking at Photographs : A Guide to Technical Terms, London 1991

COLLODION AND BEYOND - 1851-1870

In 1851, Frederick Scott Archer (1813-1857) published the details of his wet-collodion process which he discovered in 1848.* This was truly a major innovation. Glass plates were covered in a film of collodion which was a substance obtained by dissolving gun cotton (cellulose nitrate) in an ether/alcohol mixture which contained potassium iodine. In use, the clean glass plate had the syrupy collodion poured over it and drained. When the collodion had set, tacky but not dry, the plate was then sensitised by dipping it into the silver nitrate solution which then produced a light sensitive layer of silver iodine. The plate was then inserted into a dark-slide (a light-tight negative carrier). The major disadvantage of the process was that the plates and solutions had to be prepared and used fresh. This was fine for the studio photographer but it meant that to use the process out of doors a portable dark-room had to be used. In spite of this, many photographers had no qualms about hauling the equipment necessary, perhaps the best known example being Roger Fenton (1819-1869) whose images from the Crimea in spring/summer 1855 are amongst the earliest and best known images of a new profession, the war photographer.

Collodion emulsions were usually more sensitive than those of the Daguerreotype or calotype, varying from a few seconds to a few minutes depending on the intensity of the daylight, but since a prospective sitter for a portrait

* F.S. Archer "The Use of Collodion in Photography", The Chemist, Vol 2, 1851 pp257-258

could move a considerable distance in two or three seconds, the days of the neck clamp were not yet over. The glass collodion plate was however, capable of quite astonishing resolution of fine detail. When printed onto an albumen paper the results could be remarkable. This resolution was also a product of the negative being the same size as the finished print since there was no enlargement to degrade the image quality. (Although primitive solar-enlargers were available from the 1840's, and later, variations on the lantern slide projector, illumined by gas or limelight, it was not really until the 1930's, as negative sizes became smaller, that enlargement became either common or necessary.)

Archer's unconditional publication of his process (in The Chemist, March 1851) also had an interesting corollary in that Talbot attempted to claim that the process was covered by his patent for the calotype. The verdict of the resultant court case (Talbot v Laroche 1854) was somewhat ambiguous. Talbot was found to be the "first and true inventor", a fact which had never really been in dispute and Laroche (William Hendry Sylvester) was found not guilty of infringing Talbot's patent. Since Talbot had already relinquished all claims over the calotype (letter to The Times 13/8/1852) with the exception of portraits for profit, this decision effectively left Talbot with control only over calotype portraits and, as a letter of 1853 states,

"No one cares for portraits on paper now that they are taken beautifully on glass.*

"The Daguerreotype patent had expired in 1853 with the result that by 1855 England was at least able to utilise with impunity any of the photographic processes as photographers in Scotland had been able to for the past 15 years or so.

Adamson was certainly an early exponent of the collodion process. The superior resolution of many of his images from the 1850's onward suggest that he had switched from the calotype to the collodion process. There is further evidence of this in the minute book of the Literary and Philosophical Society for May 1853,

"Dr Adamson exhibited and explained an instrument of his own invention for testing the sensitiveness of photographic preparations, in particular of collodion. Experiments made in daylight do hardly ever give comparable results on account of the constantly varying state of the atmosphere, hence Dr Adamson was led to make use of gaslight, the burner being so regulated as to consume a known bulk of gas in a given time (say two cubic feet per hour). A glass plate covered with a film of collodion is placed in a small tin box with a well defined lateral aperture in the form of a Latin cross, at a given distance (two feet from the flame) and either exposed for a given number of seconds or, in comparative trials, the time is noted in which approximately equal impressions are made. Dr

* Quoted in H. Gernsheim, The Origins of Photography, New York 1981,p223

Adamson showed several specimens, all of which had been exposed for half a minute" (225).

Interestingly enough, Dr Andrew Fyfe (1792-1861) another Scottish early photographic pioneer had produced a paper in 1840 entitled "On the Comparative Illuminating and Heating Power of Different Kinds of Coal-Gas Burners, and on the Use of Coal-Gas as a Source of Heat" (226), and, although he does not relate it to photography, he does establish a reasonably empirical method of measuring the illumination afforded by different combinations of burner, pressure and flame, depth of shadow as a guide, Adamson had a much more definable standard in his collodion plate.

Basically, what Adamson was attempting to do was define an empirical method of establishing the speed of his emulsion and although there is no record of him pursuing his experiments further, the idea of sensitometry was well ahead of its time and shows that Adamson was thinking like a photographer.

It was not until over 35 years later that Ferdinand Hurter and Vero Driffield established the first independent system establishing a numerical basis for defining film, or emulsion, speed. Like the modern (1942) A.S.A. system, twice the number meant double the emulsion speed (i.e. twice as sensitive as the preceding number), although H & D numbers were about 32 times greater than A.S.A. numbers, e.g. 100 ASA would equal H & D 3,200.*

* See M. Langford, The Story of Photography, London 1980, pp54,64,72
W.B. Ferguson, Photographic Researches of Ferdinand Hurter and Vero Driffield, The Royal Photographic Society of Great Britain, London 1920

A recognised standard of film sensitivity meant that a variety of exposure aids, tables, equivalences, sliding scales and so on could be prepared. Around 1886 the first actinometers or exposure meters appeared and these worked by allowing a piece of sensitised printing out paper to be exposed through an aperture and the time taken for it to darken to a known standard was noted and the exposure worked out from the calculator provided.* Not so very different really to Adamson's tin-box of 1853!

It is not however being suggested that Adamson was the originator of the exposure meter. Robert Hunt in 1845 had written of the need to find "some accurate means of registering the relations between the amount of light and actinic (chemical) power" and he produced a device which attempted to do this (227), but it does demonstrate that Adamson was keeping abreast of the latest technology and still showing the same willingness to experiment and improve which kept him, to loosely use Rodger's words, the "principal one" (228) amongst amateur photographers.

* J.M. Eder, History of Photography, New York 1945, pp449-457

GLASGOW - 1855

In 1855 the British Association for the Advancement of Science had its Annual Meeting in Glasgow and, as stated before, a large photographic exhibition was held to coincide with the meeting. The letter and regulations sent out by the Secretary to the Photographic Committee, William Church Jnr. stated that,

> "The Exhibition will consist of Negatives and Positives on Paper and Glass, Daguerreotypes, Stereoscopic Pictures and Photographs of every description and of apparatus of an improved or novel character." (229)

This was a major exhibition, intended to be "illustrative of the present state of the art" (230) and was probably only the second major photography exhibition to be held in Britain. (The first being in London in 1852 by the Society of Arts). The exhibition attracted 60 exhibitors who, between them displayed over 570 prints. It is indicative of the popularity of Archer's process that about 90% of the works were by collodion, a process barely four years old. Adamson was one of the very few to exhibit any calotypes and they were ostensibly being displayed out of scientific interest in their ammonia fixation. Adamson's other exhibits were,

438 Comparison pictures entitled Light and Shade

439 A Portrait

443 A Lady as Catherine, in "The Taming of the Shrew" Act 2, Sc. 1

435 Skeletons of Animals

These were all by collodion and although at first glance it may seem a rather ad hoc collection they do seem to exemplify Adamson's interests. The calotypes, as well as being of historical interest, would also be of relevance to his paper to the Association titled,

"On the Fixing of Photographs" (231)

Unfortunately, only the title is listed in the Report, the paper itself is not published. The animal skeletons appear in various combinations and, of course, reflect Adamson's other main interest outside medicine and photography, the museum. Although he did take some calotype photographs of skeletons with his brother Robert, he specified that the one in the Exhibition was taken from a,

"negative on glass by the ordinary collodion method" (Archer had produced the second edition of "The Collodion Process on Glass in 1854 with some amendments) (232).

In the Journal of the Photographic Society just after the exhibition Archer detailed a method of removing the collodion image from the glass carrier, hoping to remove, as he calls it,

"... the only great impediment to the universal use of collodion in photography; for the weight, breakage and other accident attending glass negatives must be proved great annoyances to the most ardent admirers of the collodion process." (233)

One can only speculate as to what Archer's thoughts may have been as regards his decision not to patent or benefit

financially from his discovery when confronted with a warehouse full of images produced by his process.

Adamson's other four pictures are somewhat enigmatic No. 439 is described by Adamson as "Portrait of a Gentleman" but his could apply to any number of Adamson's photographs without further details.

> No. 438 is a pair of pictures described as, "Comparison pictures entitled Light and Shade - from the same individual" and 443 as "A Lady as Catherine in "The Taming of the Shrew", Act II Scene 1. Adamson goes on to say that, "The last three pictures are an attempt to shew that photography is capable of something beyond mere portraiture." (234)

At present it has not proved possible to identify any prints that might fit the Light and Shade category but either Adamson was merely demonstrating differing effects of lighting a portrait (which seems unlikely given his "beyond mere portraiture" comment above) or he was attempting to convey something more metaphysical in his images. This is certainly possible, since, in one of the Edinburgh albums (235) using Miss Murray as a model, Adamson is seen to be attempting to portray recognisable emotions by facial expressions and giving them titles like "Has she a temper", "A sunny memory", or "Something Dreadful". This series of pictures is also dated 1855 so its seems reasonable to assume that in "Light and Shade" Adamson was attempting something which similarly extended the range of portrait photography.

The "Lady as Catherine" is probably representative of another strand of photography with which Adamson was experimenting, the uniting of word and image. St. Andrews library has a small music manuscript book with half a dozen verses of Adamson's own poetry illustrated by six photographs similar to Miss Murray's series discussed above. Adamson had entitled his work,

> "A little story for grown young ladies illustrated photographically." (236) (Plate 20).

The poetry is hardly outstanding but the idea is interesting and the images are reminiscent of melodramatic Victorian tableaux or, for us, stills from silent films where emotion was portrayed by exaggerated gestures, widened eyes or hand to the forehead with the palm outward.* Adamson was one the few photographers exhibiting who attempted to produce an "art" image; the most common entries were, not surprisingly, portraits, followed by landscapes.

Proportionally, St. Andrews was very well represented. Out of 60 exhibitors only 30 were Scottish and of these 22 came from Glasgow. Of the eight remaining, five came from St. Andrews. They were John Adamson, Thomas Rodger, Major Playfair, Professor McDonald and Archibald Downie.

Rodger sent 22 exhibits, all collodion. In his covering letter he states,

> "They are all portraits as I have said before that to that branch of the art I have given my entire attention." (237)

Rodger's portraits included images of Playfair (No. 241), D.O. Hill (No. 240) and John Adamson (No. 266). Rodger also

* See S. Stevenson & H. Bennet, Van Dyck in Check Trousers : Fancy Dress in Art and Life, 1700-1900, Edinburgh 1978, esp "Tableaux, Attitudes & Photography", pp. 45-63

sent a short description of his collodion process and suggested that his prints be sold at 10/- (50p) each (238). Playfair exhibited three prints, one portrait of a lady (No. 385), a self-portrait, and one entitled,

> "Portraits of the entire audience in Major Playfair's Private Theatre." (No. 386)

This was presumably a similar image to that which he had shown to the Philosophical Society earlier that year when,

> "Major Playfair presented a paper photograph containing on a card of about 3.5 x 2 inches nearly 240 likenesses including those of the majority of the members of the society." (239) (Plate 17)

Professor McDonald exhibited two pieces of equipment, a stereoscopic camera (No.573) and a portable operating chamber (No. 576).

The other exhibitor from St. Andrews was the paper-hanger and gilder, Archibald Downie. He appears to have been invited to contribute to the exhibition by Brewster (240). He sent 13 prints, again all by collodion.

POPULARISATION OF PHOTOGRAPHY

For the Scottish public at large, this must have been their first chance to visit a large scale collection of photographs and indeed the eve of photography for (and by) the masses was at hand.

In 1852 Archer had discovered that by slightly underexposing a collodion negative then backing it with black varnish or material, a positive image could be created. Several variations on this theme appeared and the collodion positive (or ambrotype) became immensely popular. Like Daguerreotypes they were supplied in small cases but since they were easier to produce and colour they soon supplanted them. The tin-type (or ferrotype) was basically a collodion process developed direct onto a coated piece of blackened iron. Like the daguerreotype they were unique images but they were extremely quick and easy to produce and they remained in use from the 1850's until virtually the middle of the 20th century, being especially popular with sea-front photographers and consequently becoming popular holiday souvenirs.

In 1854 A.A. Disderi (1818-1898) patented the carte-de-visite which was a small 4.5 x 2.5 inch print on a standard visiting card. By the 1860's these were being produced in pairs, fours, eights and more by specialised cameras. These were given, bought, swopped and collected in their millions.

Adamson himself was the subject of a carte-de-visite in the form of two of Rodger's business cards (241). He also appears on a larger card (6.5 x 4 inches) of Rodger's which

may have been used for publicity purposes. This may be post 1855 since he has his walking stick in this picture.*

Adamson had written in 1861 to the Photographic Society of Scotland decrying the trend towards the miniature portrait (e.g. Carte-de-visite and cabinet cards) and some of his portraits may be seen as a reaction against the popular trend. The same sort of debate continues today with regard to negative size and quality: large format users look down on the common 35 mm negative, whereas the tiny 110 format, so popular with "non-serious" photographers, is positively sneered at by both. (Although the trend in the last few years towards the 35 mm "compact" camera has to some extent shifted the "snobbery" aspect from the film size to the camera itself.)

Adamson was right of course, inasmuch, as a large negative gives a crisper sharper image since it requires much less, or even no enlargement when producing a print. The photographer also tends to take more care with the lighting and composition since she/he is usually aiming for a quality image rather than a quick one.

The art critic Lady Eastlake (1810-1893), wife of Sir Charles Eastlake (1793-1865), Director of the National Gallery in London from 1855, wrote in 1855 that the invention of photography was,

> "neither the province of art, nor description, but of that new form of communication between man and man."

* According to the obituary in the Edinburgh Medical Journal (Vol XVI) p287 Adamson suffered a "shock of partial paralysis" around 1855

She considered it appropriate for the present age,

> "... in which the desire for art resides in a small minority but the craving for cheap, prompt and correct facts resides in the public at large. Photography is a purveyor of such knowledge to the world." (242)

Although there is little space in this dissertation to discuss the socio-political implications of photography it is important to realise that increasingly sophisticated mechanical means of production helped create the demand which it sought to supply. Conversely, skill and art became increasingly less important than satisfying the huge demand for images. The images themselves are icons of their means of production and although the middle and lower classes could now ostensibly emulate their perceived "betters" in having their portrait "done" there is a cavernous cultural gap between the stark unsophisticated frontality of a seaside tin-type and the carefully posed and lit studio shots of Adamson or Rodger for example. Photography may have become available to the people but a photographic portrait still said as much about the sitter's social position as it did their physiognomy, even if the Photographic News (October 1861) claimed that,

> "Photographic portraiture is the best feature of the fine arts of the millions that the ingenuity of man has yet devised. It has swept away many of the illiberal distinctions of rank and wealth."

It could just as easily be argued that it served to promulgate and perpetuate those very distinctions. A comment in The Scotsman newspaper of 1857 refers to,

> "... dead likenesses without light and without shadow, to meet the vulgar demands of public taste." (243)

Adamson, however, as a gentleman amateur is unlikely to have been involved in such "public" photography. He was very much a "society" photographer as the images in the examples section would suggest. His clientele was gathered, with few exceptions, from the landed gentry and their spouses and daughters, scientific, medical and university colleagues, and middle-class contemporaries. Although Adamson's work as a doctor must have taken him into all levels of society including the poor and underprivileged, it clearly never struck Adamson that they may have been subjects for photography. (At least the absence of any known such images would suggest not.) It would not have been surprising if he had however, since he had recognised that photography could be a useful adjunct to his curatorial work in the museum and photography was already in use in medicine. Dr Hugh Welch Diamond had communicated to the Royal Society in May 1856 a paper entitled,

> "On the Application of Photography to the Physiognomic and Mental Phenomena of Insanity",

and in the course of which,

> "frequent reference is made to the series of photographic portraits of lunatic patients with which it was accompanied." (244)

Given his interest in public health and sanitation a series of pictures depicting graphically the dangers of open sewers and so on, might have been useful to him in laying his arguments before the town council, but this view relies

on 20th Century hindsight where such images are common currency, and it is entirely possible that Adamson never regarded this sort of image as a suitable subject for photography if indeed he considered it at all.

We can infer however that he had the moral as well as the physical welfare of his citizens in mind since in 1856 a well attended talk on abstinence was introduced by Adamson (245). One obituary also describes him as,

> "... frank and affable, though occasionally severe to the intemperate and dissipated." (246)

and later,

> "... many who opposed him on the public-house system in the city were ever ready to admit that if his judgement was wrong his heart was right, at least in striving to lessen the crime and pauperism, and suffering that flow so directly from intemperance."

(In fact Adamson himself had been the victim of a minor crime in 1864 when he had sworn out a complaint against Alexander Ralston, an Edinburgh clock-cleaner, who had stolen a silver snuff-box and a pair of silver spectacles from his house in South Street (247)).

PHOTOGRAPHIC SOCIETY OF SCOTLAND - FIRST ANNUAL EXHIBITION

In December of 1856 the 1st Annual Exhibition of the Photographic Society of Scotland opened in Hanover Street, Edinburgh and although no record of Adamson himself exhibiting has been found, he was at least well represented by his pupils

> "... nearly 100 calotypes by D.O. Hill and the late Robert Adamson. These were produced by Mr Hill's refined taste and Mr Adamson's scientific skill twelve years ago. The art was then but newly born, at least but newly introduced into Scotland and it was so mainly by the exertions of these gentlemen. Has anything superior to their works been produced since? We think not." (248)

Adamsons's other protégé, Rodger, also came in for like praise,

> "Mr Rodger's portraits are truly excellent - among the best, if not the very best of the moderns, supposing Mr Hill to belong to the ancient masters. They have sweetness, middle tint and tone and are always arranged with judgement and taste. The same, if not quite in so constant a sense, may be said of the works of Ivan Szabo." (249) (Szabo was a former pupil of Rodger's who had recently set up on his own.)

The local press also praised Rodger's work ranking him the,

> "... highest of the Scotch portrait photographers" (250)
>
> "The Witness", quoted the week before, stated that, "The many excellent examples by the lens of Rodger of St. Andrews would require a lengthened notice if all received their due but we may mention... 136 the graphic portrait of Kossuth (Louis Kossuth (1802-94) was the architect of Hungarian independence. Forced to flee in 1849 he resided in Britain from 1852-59. In 1856 he addressed the working classes in Edinburgh, quoting Burns in a fairly revolutionary speech (251). Presumably Rodger photographed him about this time.) (Plate 29) and also 161, his pupil Ivan Szabo whose labours as exhibited bid fair to rival his master at an early date." (252)

Clearly Adamson had taught his pupils well and Adamson must also have had a deal of respect for Rodger's ability. In December 1857 Mr Fischer, at a meeting of the Literary and Philosophical Society had,

> "... directed attention to Niépce de St. Victor's discovery of the possibility of taking photographic copies from engravings that have been exposed to the light whilst those not so exposed will produce no alteration in sensitive preparations. Dr Adamson engaged to beg Mr Rodger to made some experiments on the subject." (253)

Given that Adamson and Rodger had had a long social and professional relationship it is rather puzzling that in 1859, when Rodger was elected an ordinary member of the

Philosophical Society, his proposer and seconder were Dr Archibald and Mr Thoms respectively, and not Adamson, Brewster or Playfair. Also, Brewster, Playfair and Rodger all appear to have been members of the same Masonic lodge in St. Andrews (No. 25). There is no record of Adamson being initiated into Freemasonry (254).

There is no recorded instance of Rodger ever exhibiting any photographs to the Society. Indeed, very little conventional photography was exhibited to the Society in the 1850's. Brewster seemed to have turned his attention mainly to stereoscope and lens design and improvement. Playfair, had turned to "novelty" photography superimposing many images on one print like his "private theatre" discussed before. Adamson, although certainly producing prints throughout this time, does not appear to have shown any to the Society. By now, of course, photography was well established and much less novel, and the Society itself was meeting less frequently. It would also appear that sometime around 1855 Adamson had suffered a slight stroke, brought on according to one obituary,

> "... by over anxiety about his patients during the occurrence of a local epidemic." (255)

Certainly in 1853 Cholera had appeared in parts of Britain and Adamson (who had been elected to the town council in November 1851) had outlined to the council certain preventative measures and contingency plans to contain the disease should it appear. (256)

Portraits of Adamson from around this period and beyond certainly show him with a walking stick and this would

appear to confirm that he had suffered some sort of paralytic seizure. (Although walking sticks were certainly not uncommon fashion accessories amongst Victorian gentlemen, the timing does suggest that Adamson's stick was for medical rather than fashionable needs.)

In 1859, at the British Association Meeting at Aberdeen, Adamson presented a paper (read by Professor McDonald) in the Physiology Section entitled,

"A Case of Lactation in an Unimpregnated Bitch." (257) This somewhat unusual paper from Adamson could well be a description of his own dog, Blanche (Plate 5) since he states that,

> "She (the bitch) is a usual occupant of a hearth rug along with a cat with which she has always been on very friendly terms."

Plate 22 of Adamson's house also shows a cat in the window with Blanche on the pavement. It could be suggested therefore that Adamson was an original exponent of another photographic genre, the "pet" photographer.

It is also interesting to note the increasing incidence of photography as a scientific adjunct from the 1850's being reflected in the Society's minutes. Indeed, this reflects a great interest in the philosophy of vision as a whole in the mid-Victorian period. Microscopes, telescopes, kaleidoscopes, stereoscopes, lorgnettes, lenses, optical toys and amusements all conspired to produce images beyond the experience of normal vision or altered perceptions of reality. The camera, in comparison, was merely a recording instrument. Some were opposed to the microscope on

religious grounds (i.e. one should not peer too closely into God's creative process) but the camera ostensibly added nothing thereto, nor subtracted anything therefrom. Thus self-imposed dichotomy was apparently recognised by Ruskin, an opponent of the microscope, who had stated,

> "Learn to use your own two eyes as God made them, to see His works as He made them." (258)

but he had no apparent reservations about using a camera to record "his works".

Adamson's last entry in the first volume of the minute book in 1861 was, not surprisingly perhaps, on medical matters, an unusually detailed mortality table for St. Andrews. Although there is no further mention of photography in the minutes, Adamson continued his photography throughout the 1860's and some fine portraits result from this period. Adamson's three sons were also born during this period, Alexander in 1862, John in 1864 and Robert in 1865. His daughter Etty had been born in 1857. (Adamson was married to Esther Christina Alexander (1831-1893) on 3rd July 1850. The ceremony was conducted by the Rev. Dr Cook, Fifeshire Journal 11/7/1850.)

Photography had come a long way from the first entry in March 1839 of

> "drawings executed by Mr Fox Talbot by the photogenic paper by the solar ray"

In just two decades a vast industry had grown up around photography, as well as a new philosophy of "seeing" and the world would never be quite the same again. The manifesto of Life Magazine (1936) seems to sum up quite well in

retrospect the destiny of the photograph as if it had been written a hundred year earlier.

> "To see life; to see the world; to eye witness great events; to watch the faces of the poor and the gestures of the proud; to see strange things, machines, multitudes, shadows in the jungle and on the moon ... to see and take pleasure in seeing; to see and be amazed; to see and be instructed."

A writer of a letter to a newspaper in March 1855 provides an interesting comment on how photography was by then viewed.

> "Photography, it is an excellence in the mechanical sciences that in their progress they bring enjoyment within the reach of the many that were formerly peculiar to the few. By the art of the photographer the sun has become the limner for the millions and a gallery of family portraits may now be had for a most un-patrician sum of money." (259)

Clearly, what John Tagg referred to as a "democracy of the image" (260) had occurred and photography, in one form or another had permeated all levels of society. It could commercialise a queen, identify a criminal, support the cultural imperialism of the white empiricist over the perceived inferior racial types, record a fast changing landscape, preserve one's ancestors and so forth - above all, it isolates and preserves that one fraction of a second from all the time gone before, and all time to come. As Marshall McLuhan wrote,

"It is one of the peculiar characteristics of the photograph that it isolates single moments in time." (261)

This was as true for Adamson and his pioneer colleagues as it is today. The Literary and Philosophical Society minute book and the images preserved in St. Andrews Library and elsewhere are a unique testimony to the small ground of St. Andrews pioneers who played such an important part in the early development of photography and helped raise it from a chemical challenge to an art form.

Volume 2 of the Society's minutes continues from November 1861 until the end of the Society in 1916, but the halcyon days of photographic discovery were gone and the subject hardly receives any mention. Indeed, within nine years, the three original devotees were all deceased, H.L. Playfair in November 1861, Sir David Brewster in February 1868 and John Adamson in November 1870.

TECHNOLOGY TO ARTISTRY

It is by no means easy to be emphatic about Adamson's contribution to the history of photography. Most popular histories get by without mentioning him at all, a few grant him a line or two, usually in the capacity of brother to Robert. Out of all the St. Andrews group however, John Adamson was certainly the most tenacious. If we remove him from the equation it is difficult to imagine in which direction paper photography in Scotland would have gone. Certainly Brewster produced the impetus but it was Adamson who maintained the momentum, Adamson who had the skill and determination to master the technicalities of the mercurial calotype, and Adamson who ultimately raised the calotype in Scotland from mere technical achievement to an art form in its own right. Playfair clearly preferred the more predictable results available from the Daguerreotype and Brewster was really too busy to maintain any concerted effort into mastering the vagaries of the calotype process. If Adamson had given up on the calotype then undoubtedly the initiative would have passed elsewhere. St. Andrews had a head start it is true, by virtue of Brewster's relationship with Talbot, but the field of pioneer photography was fast becoming a crowded one and if Adamson had not persisted with the process then St. Andrews may well have remained little more than a footnote in photographic history as one of the first places privileged to view the results of Talbot's

negative/positive process. Robert Adamson would have remained unknown and David Octavius Hill would in all likelihood have remained an obscure painter. As one author quips,

"...it would require considerable optimism to believe that in an undistracted D.O. Hill, Scotland might have found another Turner" (262)

It is important to remember that John Adamson achieved two major successes in the field of photography. The first was to triumph over the technology itself in order to produce stable images. The second was a seemingly inate ability to translate this knowledge into the production of highly competent and distinctive portraits. It is probably more convenient to examine these two issues separately although there is inevitably some degree of overlap. It should perhaps be mentioned too that although some of the points here have been touched on elsewhere in the text it seemed important to have some sort of retrospective look at Adamson's work and the technical and possible artistic factors which may have influenced it.

Technology

The modern photographer is entitled to take certain things for granted, flawless lenses, wide ranges of aperture/shutter speed combinations, consistency of film, paper and chemistry. In other words, the reliability of the technology can more or less be taken for granted, leaving the photographer with much more freedom to concentrate on more artistic considerations like lighting, composition and

pose. Adamson and his contemporaries could really take nothing for granted. Initially, the only variable which the calotypist had control over was time, i.e. how long he kept the lens cover off in order to make his exposure. In one sense though, the weather was the true arbiter here since the light on a dull overcast day could take several hours to occasion any change in a piece of sensitized material. An early priority therefore, was to increase the sensitivity of the paper to allow shorter exposure times. As discussed before, Talbot improved this very quickly by exploiting the principle of the latent image.

Most pioneers, through necessity experimented with different means of preparing their paper for exposure with varying degrees of success.

Furlong credits John Adamson with the discovery that pre-exposure to sunlight could greatly improve the sensitivity of iodised paper,

"I wish to direct special attention to the wonderful improvement in the quality of even the best iodised paper which is produced by exposing it for a few hours to the action of bright sunlight" (263).

Adamson clearly continued to experiment with improving the calotype process. In 1849,

"Dr Adamson shewed a specimen of calotype taken on an iodised paper prepared by application of acetate of silver without any nitrate, a process of his own which shortens the labour" (264).

It is not clear whether this refers to a shortening in the preparation time however, or the actual exposure time, but

since no other reference has been found to this technique it must be assumed that the acetate of silver was ultimately less effective than the nitrate.

Many other variations on this theme can be found throughout the 1840's in the pages of periodicals such as the "Chemist" or the "Philosophical Magazine" but since silver nitrate is still the main constituent of photographic paper and film Talbot clearly had the right ingredient from the start.

The type of paper was also important and each pioneer seems to have had his favourite, e.g. Turkey Mill, Dewedney, Hollingwood etc. Furlong emphasises the importance of this aspect of the process and even suggests that Whatman & Co. should,

"... engage a photographer to experiment upon papers made in various ways at their mill" (265).

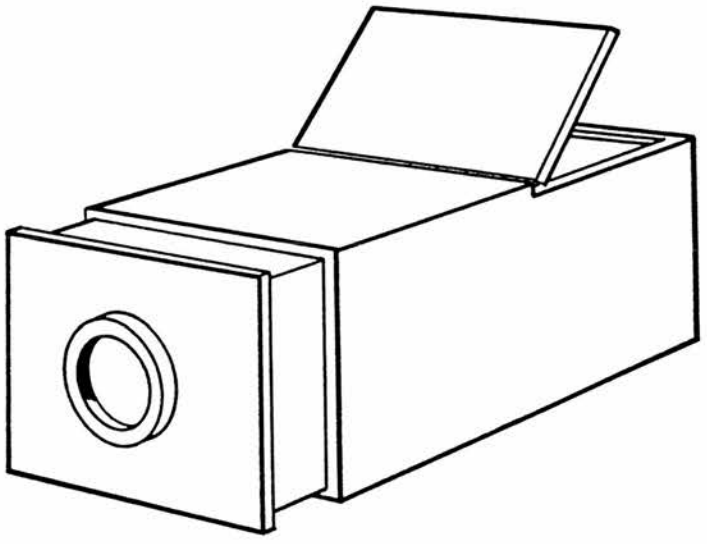
George S. Cundell (1798-1882) in his 1844 paper on the calotype process wrote, "Much depends upon the paper selected for the purpose; it must be of a compact and uniform texture, smooth and transparent, and of not less than medium thickness. The best I have met with is a fine satin post paper, made by "R. Turner, Chafford Mill" (266).

Cundell also recommends using a different paper for the printing process.

"The paper of "I. Whatman, Turkey Mill" seems to give pictures of the finest colour, and, upon the whole, to answer best for the purpose" (266). Turkey Mill was also used by the St. Andrews group.

Of course, since most early photographers prepared their own sensitized materials, this was an obvious area in which to experiment. Indeed as far as the definition of an experiment is "a procedure of which the outcome is not known in advance", almost every print might be considered experimental.

Other hardware and peripherals tended to be bought ready made or adapted to the purpose. The most widely used early adaptation was the "camera-obscura" (Fig. 1)



which was readily available as a drawing aid. This instrument projected a scene via a lens and a mirror onto a piece of translucent paper on which the artist could trace the outline of the scene. Virtually all the calotypist had to do was replace this by a sheet of sensitized paper. There were problems of course, the image was very faint as the aperture was necessarily small, and the optical and chemical foci were not co-incident, but there was really nothing else available and they were easily adapted for photographic use. (Having said that Niepce had custom-made

cameras as far back as the late 1820's which had features considerably ahead of their time, sliding box-within-box focussing, bellows and an iris diaphragm (still unsurpassed today). Interestingly, the only feature which Talbot incorporated into his early cameras was the hole with the cork to check on the progress of the image!

There were certainly at least three camera-obscurae available to Brewster in the optics classroom in 1837, one ox-eye, one horizontal, one vertical and these may well have been used for early experiments (266). There is a record of a camera having been purchased from Thomas Davidson in February 1841. This was ostensibly for the Natural Philosophy class but a record of 1858 of articles in Sir David's classroom has a note stating: "Taken up to college from Sir David's house, camera tripod. The camera is still in his house" (267). (It is identified on the inventory as the same camera bought from Davidson for £8-10/- in 1841.)

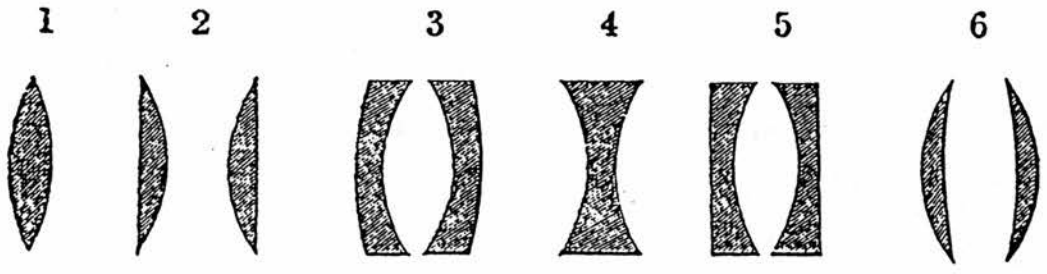
Apparently, Brewster already owned a camera by Davidson at this time (1841) since in August 1840, at the Glasgow meeting of the British Association, Sir David had given a brief account of the equipment used in the Daguerreotype process.

"The author exhibited a very perfect apparatus, executed for him by Mr Thomas Davidson of Edinburgh, who has made some essential improvements on the process" (268).

Possibly these "improvements" were the ones contained in the paper read before the Society of the Arts for Scotland in November 1840 and published in The Edinburgh New Philosophical Journal (269). Davidson had already

discovered that different lens characteristics were required for landscape and portrait photography (his solution was to reverse the lens). He also realised the limitations of using microscope or telescope lenses and set out to design an anastigmatic (corrected) lens. Other lens pioneers of course were also aware of this problem. Professor Petzval of Vienna had also designed a lens specifically for portraiture. This had a large aperture (F3.6) which meant it was many times faster (i.e. could gather more light) than its Daguerreotype counterpart. This lens was produced by Voigtlander and Sohn and was on sale by November 1840. Nichol, in his brief biography of Davidson hesitates to say whether Petzval or Davidson should be credited with the invention of the double combination portrait lens but he does claim that "The Davidson lens was superior to that of Petzval in so far as the chemical and visual foci of the former were co-incident while those of the latter were not" (270).

Davidson, and the other lens makers, had further problems to contend with. The limitations of grinding equipment meant that they tended to work with permutations of a fixed number of configurations (Fig. 2).



1. Double convex.
2. Plano-convex.
3. Concavo-convex.
4. Double concave.
5. Plano-concave.
6. Meniscus.

From On Photography Lake Price London 1858

Other more complex designs, like Wollaston's were also possible but much more difficult to produce commercially. Glass was also a problem. Not until 1886 were the Schott glass works in Jena able to market a series of specifically designed optical glasses with known and replicable refractive indices and dispersion tolerances. In the 1830's and 1840's, virtually the only glasses available were crown (containing calcium) or flint (containing lead) and although some adjustment to optical properties was possible by varying the amount of lead in the mix of flint glass the glass map was extremely limited until the 1880's work of Schott, Zeiss and others.*

Astigmatism in a lens resulted in a degraded image owing to the curvature of the lens causing different planes of focus. Chromatic aberration is a fault caused by different wavelengths of light being focussed at different points after refracting through the different angles of the lens. Calotype paper was sensitive to the blue end of the spectrum but when focussing, the human eye is influenced by the red end of the spectrum and hence the foci are not co-incident.

To some extent, this latter problem was solved by an amateur, George S. Cundell, who, in an article in the Philosophical Magazine of 1844 describes his own design for a camera which was focussed visually then re-focussed according to a sliding scale in order to adjust the chemical

* See S. Ray "The Era of the Astigmatic Lens" Technology and Art - Proceedings of The Royal Photographic Society Historical Group Conference 1989, Ed. M. Pritchard, Bath 1990 pp67-81

focus (271). Cundell's camera also had a built in lens-hood preventing flare (stray light) from tangential rays striking the front element of the lens, and internal baffles which stopped any reflections bouncing inside the camera from reaching the plate. This camera was advertised by George Knight and Sons as "Calotype Camera. On the plan of Mr Cundell with Meniscus lens and graduated scales £2-12-6d". This camera was still being advertised in W.H. Thornthwaite's "Guide to Photography" in 1852 for three or four guineas (which, incidentally, makes Davidson's camera of 1841 seem inordinately expensive at £8-10/-).

In a later article, Cundell discussed the problem of obtaining "a flat field, or a picture which shall be in focus throughout, in the margin as well as in the centre" (272). Sadly, this is a problem inherent with having circular lenses and linear negative formats which even modern computer lens technology has been unable to resolve completely.

It is interesting that Talbot himself, although a mathematician, seems to have given little or no thought to lens design, apparently using just whatever came to hand. His early "mousetrap" cameras were rough in the extreme, six butt-jointed pieces of wood (and arguably therefore more likely to have been made by Talbot himself than Joseph Foden, the village carpenter) with a microscope lens and a cork in a hole to observe the image's progress. Some of his later cameras retained the cuboid shape of the "mousetrap" but were more professionally constructed and fitted with a more sophisticated lens by Andrew Ross of London.

The first camera patent was taken out by Claudet in December 1841. This instrument also had innovative devices such as different sized plate-holders and lenses mounted on separate panels which could be quickly charged by removing a thumbscrew. Exposure was still made by removal and replacement of the lens cap.

According to Gernsheim, the first camera commercially available for sale to the public was made by another optician, Francis West (of Fleet Street, London) and sold in June 1839 as "Francis West's New Heliographic Camera with brass adjustments adapted to Mr Fox Talbot's photogenic drawing. Now ready, Price 26-30/-" (273). The same firm also sold photogenic drawing paper and fixing liquid "prepared by an eminent chemist" (possibly J.T. Cooper of the Polytechnic Institute who had given a talk to the Society of Arts on the subject of large scale iodised paper production, or perhaps Alfred Taylor who is described in fact as the "eminent chemist" in Cundell's calotype article (274).) The paper and fixer were sold at 4/- per packet and 2/6d per bottle respectively. For only £1-12-6d (£1.62) then, the prospective calotypist could have been up and running and one must assume that the <u>apparent</u> simplicity of the process suggested by the advert attracted a good few (temporary) adherents!

Initially, at any rate, the St. Andrews group appear to have only used cameras by Davidson, (who had won the Royal Scottish Society of Arts Silver Medal for his papers on photography). Brewster, in his 1843 Edinburgh Review article states that, "All of these calotypes were taken by

means of excellent camera-obscuras constructed by Mr Thomas Davidson, Optician, Edinburgh."

In a paper before the R.S.S.A. in 1843, Davidson described a compound achromatic camera from which, ".... a large number of very beautiful specimens of Daguerreotype and calotype drawings taken by Major Playfair and by Mr Adamson by means of this camera, both portrait and landscape were exhibited." (275)

From the 1850's onwards, camera manufacture ceased to be the prerogative of the scientific instrument maker and the new trade of camera or lens maker appeared. Trade and city catalogues and directories chart the progress of this new industry.

Artistry

Within a few years of its inception then, photography was able to rely upon quite a substantial industry to support it and Adamson and his contemporaries had access to quite a range of photographic hardware and consumables. This certainly made the practice of photography considerably easier but what of the more aesthetic qualities of Adamson's work? We can state with some confidence that he was a successful technician but he was also something more, he was a man with a natural eye for a picture, especially in portraiture. No matter how great his technical mastery of the medium however, if his portraits had ended up looking like the startled uncomfortable victims of many of the commercial daguerreotypes, he would deservedly have been forgotten. Adamson's subjects however look comfortable and

relaxed and their informality is the very antithesis of the pained and clamped rigidity of so much early portraiture.

There are several possible reasons for this lack of tension in Adamson's portraits. Most of his subjects were friends, relations, colleagues and their families. Consequently, they were unlikely to feel intimidated or mistrustful of the photographer. The French photographer, Gaspard Nadar (1820-11910) had said of his portraits,

"The person I do best is the person I know best" (276) and this maxim seems to have held true for Adamson as well. He was also a general practitioner and we must assume that as such he possessed some degree of proficiency at putting people at their ease. Another important consideration is the social class from which Adamson gleaned the majority of his sitters - the professional and landed classes. It is fairly certain that many of his subjects would have sat to have had their portrait painted at some point and would therefore have had some idea of what was required in adopting and holding a pose. The few moments posing required for a camera portrait must have seemed virtually instantaneous in contrast to a sitting for oils. To some extent therefore, quite a few of Adamson's subjects could be considered to have had "previous modelling experience". The ambient surroundings, and the relaxed air of a man who was not taking photographs in order to earn a living must also have been conducive to producing relaxed subjects. Although Adamson did produce some outdoor images, for example, Plates and the majority of his later works are studio based. This is hardly surprising given that the portrait photographer

shared many of the same problems as a conventional artist and the control of the picture environment, light, props, draperies, model's comfort etc., is more easily maintained in a studio setting than out of doors.

In some ways it seems inevitable that the embryo portrait photographer should turn to painting for inspiration in posing their subjects. On the other hand, if one is going to photograph a seated figure, the permutations of pose are rather limited. The portrait photographer inevitably became part of an ancient tradition of producing images of man (and woman) in some sort of relationship to their surroundings. From cave paintings to Egyptian tomb portraits, through the Renaissance and beyond, the artist invariably depicted his figures with the clues required for the viewer to deconstruct the image; sometimes blatant, sometimes enigmatic but the individual's occupation, rank, status, or power would be there to be "read out" by the viewer. Adamson's signifiers may be less deliberate perhaps but they are there nonetheless. They are present in the costume, the jewellery, the coiffure, the props and the confident, assured demeanour of his sitters.

Adamson uses props rather sparingly, usually as a clue to the sitter's profession. Thus, Lyon Playfair (Professor of Chemistry in Edinburgh) is posed with chemical apparatus (Plate 31), Smith the Naval cadet has a telescope (Plate 12), Dr William Playfair a stethoscope (Plate 11) and so forth. One of the foremost portrait photographers of modern times, Arnold Newman, uses much the same approach, for example, the mountaineer, Chris Bonnington is posed with

rope and carabiners, George Harrison, musician, with a sound-mixing desk, or Francis Crick, scientist, in front of a blackboard. Such portraits then, serve both to describe and inform; we are provided with a likeness of the individual and a visual pointer to their profession.

Roland Barthes made the seemingly enigmatic statement that,

"Whatever it grants to vision and whatever its manner a photograph is always invisible: it is not it that we see." (277)

Certainly, the photograph has implications beyond its two dimensional boundaries and the image is rarely sufficient in itself. In portraiture especially it is rarely enough to appreciate the technicalities of pose and lighting if the subject is anonymous - the question is always present, who is he, who was she? Plates 21 and 15 are two portraits by Adamson. If they were titled "Anonymous Male", the causal viewer might ponder for a second or two, take in the pose or costume and move on. When we discover however that Plate 21 is Professor Adam, discoverer of Planet Neptune and Plate 15 is Captain Speke, discoverer of the source of the Nile, we start to read all sorts of things into the image; perhaps intelligence in the eyes, or determination in the set of the jaw. These are not properties inherent in the images themselves, they are connotations with which we invest them.

The viewer then, is somehow more comfortable with an image if s/he can categorise it and therefore gauge an appropriate response in light of this knowledge.

Apart from the odd genre image such as Plate 6, Adamson's output, as suggested before, was very much that of a salon photographer. As Nadar photographed Wagner, Rossini and Baudelaire, so Adamson photographed Charles Kingsley (Plate 33), John Speke (Plate 15) and John Couch Adams (Plate 21).

His female sitters are invariably middle or upper class. Chadwick makes the comment that

"The enshrinement of the Victorian middle-class woman at home contributed to the pictorial celebration of madonna-like women and to an emphasis on the stages of women's lives through which femininity is defined and secured." (278)
It is certainly possible to regard several of Adamson's portraits in this light, for example, Miss Carstairs (Plate 26), Miss Ferrie (Plate 34) or Miss Godfrey (Plate 24). Inevitably, the women tend to be posed with articles that signify largely leisure pursuits, books, sewing, Countess Dudley with her stereoscope (Plate 16), for example, whereas man, the breadwinner is usually posed with the trivia of his occupation. Where a woman does enter what was perceived to be the man's field, as in the case of Elizabeth Garret Anderson (Plate 36)(the first female M.D. of the Sorbonne, Paris), she becomes "entitled" to be posed with a "male" symbol, the microscope. It is easy to be judgemental of course, with a late 20th century viewpoint regarding the sexism or tokenism inherent in certain images but Tagg makes the important point that we,

"... need to recover or recreate the historical conditions in which particular photographs were taken, and

in which it was possible for them to produce certain images." (279)

It is relatively easy therefore to discuss the purely pictorial elements of an image, pose, lighting, etc., it is much more difficult to determine the historical context and ideological constraints contingent upon the production of an image.

At one level then, we can passively admire the photographic artistry of Adamson, at another we can attempt to tease out some of the assumptions and meanings inherent in the image. If we do both, then it seems reasonable to assume that we can arrive at some telling conclusions about Adamson himself but, in one sense, we can do little better than say that he was a middle-class Victorian physician who, amongst other things, was also a serious amateur photographer. Of course, various caveats raise this status somewhat; the fact that he was in at the beginning of the calotype, had several pioneering "firsts", and taught his brother Robert who went on to greater things. It is most unlikely that the modest Adamson would have made any extravagant claims for his abilities or achievements and in one sense any mythical status with which we may now attempt to invest his work would probably be anathema to Adamson.

Having said that however, Adamson's absolute technical and artistic mastery of his subject should have gained him a place in his own right in photographic history and not, as so often happens, merely as Robert Adamson's brother.

ADAMSON'S DEATH AND CODA

John Adamson died on the 11th August at Dulnain Cottage, Grantown, Strathspey while on holiday. According to the newspaper he was,

"Siezed with Erysipelas of the head and face." (280)

This is an acute streptococcal skin disease which produces violent lesions and oedema in the skin along with vomiting, fever and headache. It was popularly called St. Anthony's Fire (280).

His popularity may be gauged from the many tributes accorded him in the local press. The Gazette stated,

> "He was an accomplished naturalist, geologist and botanist. About 30 years ago he, along with the late Sir David Brewster and the late Sir Hugh Lyon Playfair kept alive in Scotland the art of photography in which he made many important improvements." (281)

The Courant described the funeral,

> "A large number of people attended the funeral and the whole route, from his house to the Cathedral burial ground was thronged with spectators, many of whom showed by their emotion how much they loved him." (282)

Dr Ainslie's eulogy, which had been read at the service in Martyr's Church the previous Sunday (14th August, 1870) contained the following lines,

> "There is scarcely a home in St. Andrews with which, during his long practise of 35 years he has not been brought into close connection. A man of high intelligence and attainments both general and

> professional, of sterling service and worth, full of energy, at the same time eminently practical, judicious and warm-hearted." (283).

One writer suggested that in view of Adamson's interest in sanitary reform, a bursary in his name should be founded,

> "for the encouragement of the study of human physiology as applied to the laws of health and the prevention of disease." (284)

but there is no evidence that any such scheme was introduced.

A long poem, already referred to, was printed in the Gazette and this is reproduced in Appendix 4.

His obituaries in the Lancet and the Edinburgh Medical Journal both mention his contribution to photography, as well as his medical prowess. It is rather ironic that so much was written in praise of John after his death and he now scarcely warrants a mention in most photographic histories, whereas his brother Robert, who is now so well known, was conspicuous by the absence of remarks in the press after his death in 1848.

It is not known what happened to Adamson's negatives and equipment after his death. Some material clearly stayed with the family, the two Edinburgh albums (T 1942.1.1 and T 1942.1.2) compiled by John Adamson, having come from Robert Adamson, John's youngest son, through his mother, sister then via his nephew (W.P.A. Tulloch). Album 8 in St. Andrews University Library was also compiled by Adamson himself and presented to H.L. Playfair. Other examples in St. Andrews may be found in:-

Vol. 4, Vol. 5, Vol. 6, Vol. 9, Vol. 13, Vol. 19 Vol. 24, Vol. 37 and Laurence Swan Thomson Albums - Vols. I and II

The National Portrait Gallery in Edinburgh also has an album (PGP 177 "Calotypes taken from glass albumen negatives by Dr John Adamson C 1855") and several loose prints. Other examples may be found in the "Tartan Album" held in the Fox Talbot museum at Lacock Abbey, the "Brewster" album in the J. Paul Getty Museum and an album in the Jammes Collection, now also in the J. Paul Getty Museum.

As listed earlier, there are a number of Adamson prints in the L.S. Thomson albums. Thomson had been Rodger's manager for almost 20 years before opening his own studio at 90 South Street in 1883 (285). It is possible that Rodger inherited some, or all, of Adamson's negatives. If this was the case, then tragically, Adamson's, like Rodger's negatives were probably destroyed when Rodger's studio was cleared out prior to refurbishment. (After the death of Rodger's son, George Berwick Rodger (19/7/1922) who had carried on the business.) A local historical artist had a discussion (c1966) with two of the workmen who had cleared out the studio (working for Hutton, the plasterer) and they claim to have spent their lunch hours smashing masses of glass negative (five carts full) to be taken away by a French polisher who used the glass to scrape off old varnish. Sizes apparently ranged from 3 or 4 inches wide up to 12 x 8. Bundles of paper negatives were also apparently disposed of (described by the workmen as "like pictures on greaseproof paper") (286).

It would certainly appear that not very much was kept by the family, since his son Robert wrote,

> "I was just 5 years old when my father died in 1870 and never realised till years after the interest and value of my father's and uncle's work in photography which followed the advice of the late Mr Fox Talbot, and strangely as it now seems to me, no one in my later life ever made reference to it." (287)

This would tend to suggest that by the time Robert was old enough to be aware of his father's past, there was nothing around related to photography to draw his attention to it.

It is fortunate however for present and future historians of photography that there is still a reasonable body of work by Adamson still in existence, which should allow him to be judged by future researchers both on his own merits and in relation to other amateurs practising photography in its early decades.

It is after all comparatively easy to assess Adamson's contribution to photography when looked at on a purely local scale. He was in at the beginning and he stayed with, and conquered the calotype process, when those around him were apparently ready to give it up. It is much harder to assess his importance on a wider scale, especially when the field began to expand and Adamson has to bear comparison with dedicated amateurs and the new breed of professional photographers and portraitists. Perhaps an undistracted Adamson, less committed to medicine and more to photography, might have emerged a more prominent figure in the history of photography but such speculation is largely profitless.

Adamson did exhibit his work at Glasgow in 1855, which would tend to suggest that he felt his work at this time could stand comparison with his contemporaries but the art of photography was moving fast and the second generation of photographers, like Julia Margaret Cameron, were ready to assimilate and build upon the work and knowledge of their pioneer mentors.

Although Adamson seems to have been content to spend his later years taking occasional portraits of friends, colleagues and visitors to St. Andrews, the fact that he did not work in isolation and ignorance of recent events seems evident from his letter to the Royal Photographic Society of Scotland 829/11/1861). In this he decries the recent trend towards miniaturisation (carte de visit) and sees the photographic art as "progressing backwards." (Scottish Record Office G.D.356/12/71)

Although Adamson's contribution to the early years of photography are fairly well documented through the Literary & Philosophical Society's Minute Book and related research, there are still areas which would reward further study; for instance,

Adamson's years abroad remain fairly enigmatic and speculative.

His work as museum curator against the whole background of museums and collecting has not yet been looked at in any great detail.

A complete checklist of securely provenanced Adamson prints remains to be compiled.

Hopefully this thesis adds something to our knowledge and appreciation of John Adamson and goes some way further to help produce a more complete picture of this multi-faceted individual.

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APPENDIX I

References to Photography in the Minute Book of the Literary and Philosophical Society of St. Andrews (16th April, 1838 - 13th April, 1861).

4th March, 1839

"The secretary then, in the absence of Sir David Brewster who was absent from indisposition, read a paper by Sir David "On the Existence of Cavities in Amber Containing Fluids" which is preserved in the Transactions of the Society and at the same time, at the request of Sir David exhibited some specimens of drawings executed by Mr Fox Talbot by the Photogenic paper by the Solar Rays."

2nd November, 1840

"Sir David also exhibited some fine specimens of Daguerreotype and photogenic drawings, executed under the superintendence of Mr Davidson (A) of Edinburgh and Mr Fox Talbot of Lacock Abbey."

Captain Henry Brewster, 76th Regiment elected Honorary Member.

1st March, 1841

"Sir David Brewster exhibited new specimens of photography, executed under the direction of Mr Fox Talbot of Lacock Abbey."

5th April, 1841

"Thomas Davidson esq. Optician. EDIN." elected Honorary member.

"Mr Thomas Davidson, the newly elected Honorary member exhibited Daguerre's apparatus for obtaining impressions of objects, in the camera-obscura and explained several improvements he had made, especially for adapting the camera for taking portraits, and at the close of the meeting, exhibited the process itself by taking a view of the new college buildings."

"Professor Connell (B) at the request of several of the members, explained the chemical theory of the process for which vide transactions."

3rd May, 1841

"Thomas Davidson of Edinburgh exhibited his new and improved camera-obscura for taking Daguerrotype drawings and portraits and exhibited numerous specimens executed by Major Playfair and himself."

5th July, 1841

"Sir David Brewster exhibited many fine specimens of Mr Fox Talbot's calotype or photographic pictures and explained the process by which they were executed for which vide transactions."

W.H. Fox Talbot elected Honorary member of Society.

4th October, 1841

"Sir David Brewster then explained the improved new camera for taking Daguerrotype and Calotype drawings invented by Mr Thomas Davidson of Edinburgh and read a paper in which he suggested further improvements.

A number of very fine Daguerrotype and Calotype drawings were exhibited by Major Playfair and Mr Adamson."

1st November, 1841

"Sir David Brewster exhibited a great number of photogenic drawings executed by Mr Fox Talbot and stated that these are now known by the name of Talbotype instead of Calotype, the former name."

13th January, 1842

"Major Playfair exhibited to the Society several beautiful Daguerrotypes executed by Mons. Claudet (C) of the Adelaide Gallery, London by his new and rapid photogenic process." Claudet elected Honorary member of the Society.

7th February, 1842

"Major Playfair exhibited to the Society a variety of portraits and groups of ladies and gentlemen residing in St. Andrews taken by himself since last meeting by the Daguerreotype process using the chloride of iodine whereby the process is limited to from 5-10 seconds. He also showed a portrait of M. Claudet copied by the electro-type from an original picture: also a small tablet sent by M. Claudet to show the effects which different colours in glass have when

impressed upon the silver-plate through the camera, thus affording a guide to parties in dressing to sit for their portrait."

7th November, 1842

"Sir David Brewster communicated to the Society a letter which he had received from Professor Moser of Konigsberg containing an abstract of his discoveries on the existence of Latent Light. From various experiments Professor Moser (D) has arrived at the conclusion that a portion of light becomes latent when any liquid is converted into vapour and the same light is disengaged when the vapour is condensed.

Sir David mentioned various implications of these results to photography and in vision and he stated that in the course of taking positive calotype photographs he was led to the fact that in many of the results attributed by some to latent light and by others to heat, the affect was produced by the absorption of matter in a state of vapour passing from the object to the surface of the glass or metal upon which the image of that object was impressed. For some of the facts connected with this interesting subject vide transactions."

"Major Playfair, Dr John Adamson and Sir David Brewster exhibited to the Society some beautiful specimens of photography."

30th November, 1842

"Sir David Brewster next exhibited to the Society a plate of glass on which he had impressed a portrait which appeared only when the plate was breathed upon. For the detail connected with this interesting experiment vide transactions."

3rd April, 1843

"Mr Adamson read a letter from Mr W.H. Furlong (E) relative to a new mode of preparing iodised paper for the Calotype vide transactions."

1st May, 1843

"Sir David Brewster exhibited two series of Calotype portraits, the one executed by Mr Henry Collen (F), London and the other by Captain Brewster of the 76th Regiment."

5th February, 1844

"Dr Adamson exhibited some beautiful calotypes executed by his brother Mr Robert Adamson."

7th April, 1845

"Sir David Brewster sent 36 beautiful calotypes executed by Mr Fox Talbot for the inspection of the members of the Society.

4th December, 1848

"Sir David Brewster shewed and described a new stereoscope in which the pictures are placed side by side and looked at through prismatic lenses. This arrangement, besides making the instrument portable allows adaptation to the eye and magnification of the pictures. A binocular camera, on the construction of which Sir David is engaged, will allow stereoscopic pictures of statues to be taken, so that on looking at these in the stereoscope, an observer will see a miniature of the statue."

5th March, 1849

"Sir David Brewster shewed and exhibited several new stereoscopes of his invention and explained their construction). In one, a convex lens cut in two is used to double the images, in another a second image is produced by the total reflection in a prism, thus superseding the necessity of drawing two pictures."

2nd April, 1849

"Dr Adamson shewed a specimen of calotype taken on an iodised paper prepared by application of acetate of silver, without any nitrate, a process of his own which shortens the labour."

30th November, 1849

"He (Brewster) also explained a new method of taking photographs invented by Niépce who used glass plates covered

with a film of albumen and then prepared like calotype paper to receive the negative picture. Some beautiful specimens of Talbotypes obtained by this means were laid before the Society.

Sir David Brewster gave a short description of the chromatic stereoscope which he invented lately."

4th March, 1850

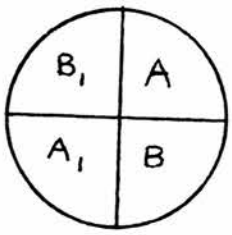
"Sir David Brewster shewed a much improved stereoscope and explained its construction. He also laid before the Society a simple instrument called Lorgnette Picturesque (G) for exhibiting dissolving views."

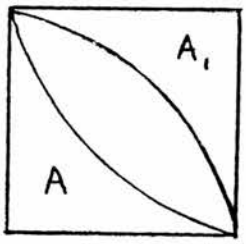
5th April, 1851

"Sir David Brewster shewed some beautiful pictures on albuminised glass plate."

29th November, 1851

"Sir David Brewster also explained a method that had occurred to him of making two lenses of mathematically the same focal length (which cannot be done by grinding). He proposed to cut a lens into four quarters and superimpose the cross quarters. He thinks that by so doing the aberration will be lessened."





24th April, 1852

"Sir David Brewster entered into an explanation of the defects of photographic pictures, taken with large lenses, which must be monstrous in as much as a lens gives a picture

such as would be seen by an eye with a pupil of the size of the lens. Hence to obtain an exact correspondence the size of the lens should be reduced to that of the pupil. This has as yet been impractible for want of intensity of the transmitted pencil to affect the photographic tablet but the quickening processes that have already been discovered and which no doubt admit of further improvement entitle us to hope that accurate pictures may soon be taken with the smallest and cheapest apparatus. Of course, the present defects are still more prejudicial in a binocular camera destined to take stereoscopic pictures."

24th April, 1852

"Sir David Brewster shewed his Cameoscope (H), a simple instrument invented by him some years ago and producing apparent inversion of relief. It consists of two convex lenses of equal focal length, placed in a tube at a distance equal to the sum of their focal lengths". Tried by some members - some could seen the effect, others could not. Individual eye adjustment necessary.

2nd May, 1853

"Dr Adamson exhibited and explained an instrument of his own invention for testing the sensitiveness of photographic preparations, in particular of collodion. Experiments made in daylight do hardly ever give comparable results on account of the constantly varying state of the atmosphere, hence Dr Adamson was led to make use of gaslight, the burner being so regulated as to consume a

known bulk of coal gas in a given time (say 2 cubic feet per hour). A glass plate covered with a film of collodion is placed in a small tin box with a well defined lateral aperture in the form of a Latin cross, at a given distance (2 feet from the flame) and well exposed for a given number of seconds or, in comparative trials, the time is noted in which approximately equal impressions are made. Dr Adamson shewed several specimens, all of which had been exposed for half a minute."

Mr Fischer (I) "... exhibited a copy of Becquerel's chemical spectrum, also a negative chemical spectrum taken on collodion and a positive copy on paper presented to him by the Rev. Kingsley (J) of Sidney Sussex College, Cambridge."

2nd December, 1854

"Professor Fischer exhibited photographs of microscopic objects of singular beauty and explained the process by which they were taken by Mr Kingsley of Sidney Sussex College, Cambridge."

7th April, 1855

"A vase belonging to Isaac Newton and covered with astronomical tables was shown to the Society. Subsequently, "Major Playfair had taken photographic copies."

5th May, 1855

"Major Playfair presented a paper photograph containing on a card of about 3.5" x 2.5" nearly 240 likenesses including those of the majority of the members of the Society."

2nd February, 1856

"Sir David Brewster described a new stereoscope consisting of 2 lenses, one plano-convex, the other plano-concave, of equal curvature in contact with their plane faces, and capable of sliding over one another. When the axes coincide, they would act like a watch glass, producing no angular deviation, but by shifting one of the lenses laterally, a prismatic effect is produced, and the image seen by one eye through the lenses is shifted, and brought to coincidence with the other seen with the naked eye. This stereoscope has the advantage of being applicable, whatever the powers of the eyes may be, by varying the amount of shifting of one of the lenses.

Sir David Brewster exhibted very fine stereoscopic photographs representing views of Pompeii, Palermo etc."

1st March, 1856

"Sir David Brewster described a new mode of taking portraits for the stereoscope free from many defects of the usual one where either two cameras are used simultaneously or the same consecutively in two different positions. "It consists of one large achromatic lens more than 2.5" in

diameter (this being the average distance between pupils of the eyes). This lens is covered with a cap pierced by two holes 2.5" apart, the portion of the lens left uncovered will see the object as the eyes would and will form pictures on the screen or photographic plate similar to those that would be formed on the retinas. The same lens, if reversed and held before the eyes, will serve as a stereoscope, uniting the two pictures previously taken."

29th November, 1856

"Sir Hugh Lyon Playfair handed round some photographs containing a great number of portraits in a very small space, yet properly distinct."

28th November, 1857

"Sir Hugh Playfair, having taken the chair, Sir David Brewster read a notice on the subject of the stereoscope and pictures formed on ground glass in the camera. Sir David opposed to the views of M. Claudet has explained in a paper lately published in the Proceedings of the Royal Society of London (K), and stated that every leading fact in M. Claudet's theory is a mistake. He explained his own views and showed their exactness by a striking and decisive experiment; if we look through a sterescope open at the bottom, at the pictures formed on the ground glass of another stereoscope, we see the same effect as if we used ordinary pictures in the usual way, a proof that the pictures on ground glass possess no relief."

26th December, 1857

"Mr Fischer directed attention to "Niepce de St. Victor's (L) discovery of the possibility of taking photographic copies from engravings that have been exposed to the light, whilst those not so exposed will produce no alteration in sensitive preparations. Dr Adamson engaged to beg Mr Roger to make some experiments on the subject."

30th January, 1858

"Sir David Brewster explained that he had succeeded in obtaining photographs of the figures in the Kaleidoscope. The Kaleidoscope is inserted into the square box of a camera and on to its axis is placed a small convex lens by which an image of the figure is thrown on the photographic preparation at the back of the camera. Specimens thus obtained were exhibited to the Society."

"Sir David Brewster arranged that after the meeting Dr Heddle (M) was going to try the photographic powers of different flames and invited members to witness the experiment. It was stated that Mr D. Smith (N) had succeeded in taking negatives from positive pictures on glass by an ordinary gas flame at a distance of 10 inches."

27th February, 1858

"Sir David Brewster exhibited a new form of reflecting stereoscope invented by Mr Hardie, a law-printer in Edinburgh, who had proved himself well acquainted with the subject. It resembles somewhat an open reading desk which

readily folds up into a small compass and is provided with two reflectors fixed to a sliding frame which has to be adjusted in height according to the picture. It thus possesses the advantage of allowing large pictures to be used. But on the other hand on this very account it becomes expensive and like other reflecting stereoscopes it has the serious fault of inverting with regard to right and left, and as constructed admits of the adjustment of the line of junction in a vertical plane but not in a horizontal direction as in the lenticular stereoscope. Besides, the reflection from the second surface causes confusion. Mr Hardie indeed proposed to remedy this by making use of slightly prismatic glasses, but this is liable to other objections. A discussion arose with regard to the horizontal adjustment. Various modes were proposed, the simplest and clearly the most efficacious being Mr Miller's to have the pictures not mounted on the same canvas or board but separate."

27th March, 1858

"Sir David Brewster gave a full account of Niepce de St. Victor's recent discoveries in photography from which it appears that light can be accumulated on and retained by various substances for days, e.g. if an engraving after having been exposed to the sunlight or even to the diffused light of day is applied to a sensitive paper, a copy will be produced - the whites having absorbed light and giving it out. Light will thus act even at a distance of 2-3 cm."

27th November, 1858

"Sir David Brewster also shewed a photograph of a halo taken by Mr Wilson (O) of Aberdeen and pointed out the importance of photography to meterology and geology."

"Sir David Brewster then read a translation of a memo of Professor Petzvale (P) of Vienna in which he generally describes his new combination of lenses which present very great advantages for photography and serves at the same time as a telescope possessing a much larger field of view for equal magnifying power than any yet constructed. It consists mainly of a pair of double object glasses separable by a screw, so that a similar adjustment can be made to that which is provided in the eye in adapting itself to different distances."

3rd January, 1859

Thomas Roger elected an ordinary member of the Society. (Proposed by Dr Archibald, seconded by Mr Thoms.)

4th February, 1860

"Sir David Brewster read the following communications to the Society .... a verbal communication regarding "the Pistolgraph" an apparatus for the production of instantaneous photographs, invented and patented by Mr T. Skaife (Q). The Pistolgraph is an extremely small camera between 2 or 3 inches focal length and the pictures obtained by it are afterwards enlarged. The advantages of the process arise from the use of a small and thin lens. Owing

to the small aperture, distortion of the picture is avoided; while the thinness of the glass increases the sensitivity of the apparatus. Sir David Brewster recommends the use of thin plano-convex lenses of rock-crystal."

NOTE

VIDE-TRANSACTIONS

Several of the Minute entries contain this instruction (i.e. see transactions). These were presumably printed and handed out to members. It is unfortunate that these were not bound by the Society (or at least if they were they have not survived), since they contain considerable detail. The only example I have been able to find is the one from the meeting of 5th July, 1841 which is reproduced in Appendix 3.

N.B.

Although the Minute entries are usually quite brief the local press often give a more expanded account.

NOTES TO APPENDIX I

A. Thomas Davidson (d 1878) See John Nicol's concise biography. In: British Journal of Photography, August 1879/ See also Clarke T.N. et al. "Brass and Glass Scientific Instrument Making Workshops in Scotland". National Museums of Scotland, Edinburgh, 1989, pp. 45,99,101,119.

B. Arthur Connell was the first Professor of Chemistry at United College from the inception of the chair in October 1840 until his retirement in August 1862.

C. Antoine-François-Jean Claudet (1797-1867) was a glass importer who settled in London in 1828. Claudet learned the Daguerreotype process from Daguerre himself in 1839 and became the first British patentee of the process. Claudet himself was photographed by Thomas Rodger C1860. (See Laurence Swan Thomson Album, Vol. 1/39 St. Andrews University Muniments.)

D. Professor Ludwig Moser of Königsberg had several papers published on the subject of light. See: On Vision and the Action of Light on All Bodies; Some Remarks on Invisible Light; On the Power which Light Possesses of Becoming Latent. In: Scientific Memoirs, Vol. III, London, 1843. Moser was made an Honorary member of the Society in November 1842.

E. There are several references to William Holland Furlong in the text. See also: W. Holland Furlong, St. Andrews and the Origins of Photography in Scotland, by Graham Smith, In: History of Photography, Vol. 13/2, April-June 1989, pp. 139-143.

F. Henry Collen (1800-1875) was the first photographer to take out a license under Talbot's Calotype patent. He opened his studio in London in 1841.

G. No reference to this instrument could be found in either scientific or photo/optical reference works. No record of one could be traced in the Science Museum (London). Possibly it was a one-off invention of Brewster's - perhaps an adaptation of a common lorgnette. (Which was either a pair of spectacles or opera glasses mounted on a handle.) Thomas Davidson had also exhibited "Dissolving Views" at the Calton Convening Rooms in Edinburgh in 1841 but unfortunately no further information is provided. (Scotsman, 1st December, 1841).

H. No other reference to this device has been found so far but presumably it was based on an observation described by Brewster in his book "Letters on Natural Magic", pp. 98-106 which states,

> "One of the most curious of these (phenomena) is that fake perception in vision by which we conceive depressions to be elevations and

> elevations depressions, or by which intaglios are converted into cameos and cameos into intaglios. This curious fact seems to have been first observed at one of the early meetings of the Royal Society of London, when one of the members, in looking at a guinea through a compound microscope of new construction, was surprised to see the head upon depressed, while others could only see it embossed as it really was."

The "Cameoscope" therefore was probably a tube with a lens on one end and a stage on the other to mount the object, the apparent illusion being produced by uneven lighting of the relief.

I. William Lewis Ferdinand Fischer was Professor of Natural and Experimental Philosophy at St. Andrews from 1847 - 1859.

J. William Towler Kingsley (1815-1916), clergyman and scientist produced an article entitled,

> "On the Application of the Microscope to Photography", which was published in the Photographic Art Journal, Vol. 6, No. 5, November 1853, pp. 271-274.

K. Proceedings of the Royal Society of London, VIII 1856 - 1857, May 1856, pp. 104-110.

L. Niépce de Saint-Victor, Abel (1805-1870) A cousin of Nicéphore Niépce and inventor of the glass albumen process which gave fine resolution but long exposures.

M. Matthew Forster Heddle (1828-1897) was born on Hoy in Orkney and studied Medicine in Edinburgh. In 1856 he became Connel's assistant at St. Andrews and in 1862 succeeded him to the Chair of Chemistry. He was primarily a mineralogist and his extensive collection is now in the N.M.S. in Edinburgh. he is also listed in Slater's Directory of Scotland (1867) as a Surgeon, residing at 172 South St.

N. David Smith (d 1873) was a Watchmaker in St. Andrews and also a member of the Town Council. He was also involved in a scheme to increase the water supply to the town. Smith was also the compiler of the inventories of the Natural Philosophy classrooms. These and other correspondence of Smith are held in the Hay Fleming Library in St. Andrews.

O. Possibly George Washington Wilson (1823-1893) who moved to Aberdeen in 1850 after training as a painter in Edinburgh and London. By the 1880's he was one of the world's most prolific publishers of topographical views. See Roger Taylor, George Washington Wilson, Artist and Photographer 1823-93, Aberdeen, 1987.

P. Josef Max Petzval (1807-1891) was a Viennese Mathematician and Lens Designer. He designed a portrait lens for Voigtländer's camera in 1841.

Q. Thomas Skaife (d 1871) had trained as a painter but turned to photography in 1856. In 1859 he produced the PISTOLGRAPH. This was a sophisticated piece of apparatus with a fast lens F2, and a revolutionary shutter producing circular (1" dia.) negatives. Brewster seems to have been acquainted with Skaife since he is mentioned a few times in related correspondence. Although the Pistolgraph was quite small (3.5" x 2.5") it really looked nothing like a pistol but apparently this did not prevent Skaife suffering the ignominy of being arrested for pointing his device at Queen Victoria. For further information on this camera see:

R.C. Smith, "Antique Cameras", pp. 131-132

L. Schaff, "Thomas Skaife's Pistolgraph and the Rise of Modern Photography in the Nineteenth Century" (Photographic Collector, Vol. 4, No. 1, pp. 27-39)

APPENDIX 2

LIST OF ORIGINAL LITERARY & PHILOSOPHICAL SOCIETY OFFICE BEARERS

The original signatories are listed in the beginning of the Minute Book, where Adamson's is the first signature. A listing also appeared in the Fifeshire Journal of 19th April, 1838 and the following list appeared in the Fife Herald of 19th April, 1838.

> "On Monday 16th INS a number of gentlemen connected with the University met in the University Library for the purpose of forming themselves into a Literary and Philosophical Society with the general object of promoting literary and philosophical research and also of forming a Museum in the University to which it is expected that contributions will be sent by the alumni of the University who may be settled in different parts of the world. The Reverend Principal Haldane was in the Chair when the following gentlemen were elected office-bearers for the ensuing year."

President	The Right Hon. Lord W.R.K. Douglas, FRS
Vice-Presidents	Sir David Brewster, KH, LLD, FRS
	Rev. Principal Haldane
	Rev. Dr G. Cook, FRS
Council	Dr Anderson

	Cnl. Playfair
	Dr Govan
	Mr Duncan
	Major Playfair
	Dr Daun
	Rev. Mr Lyon
	Dr Briggs
	Mr Alexander
Treasurer	John Bain Esq.
Secretary	Dr P. Mudie
Asst. Sec.	Rev. McBain
Curator of Museum	Mr John Adamson

APPENDIX 3

PROCEEDINGS

OF THE

LITERARY AND PHILOSOPHICAL SOCIETY, OF ST ANDREWS.

JULY 5TH. 1841.

The regular Monthly Meeting of this Society took place on *Monday, the 5th instant,*—

DR GILLESPIE in the Chair.

The Minutes of last Meeting having been read, the Curator of the Museum announced the following donations, viz:—

From MRS TURPIE, St Andrews,—a Goat Sucker, shot at Strathtyrum.

MR JAMES PHILP,—Specimen of the Common Tern.

MR LAWRENCE STARK, Boarhills,—an Eider Duck, (Male,) shot at Boarhills.

MR BAIN,—Specimens of the Poplar Moth.

The following Gentlemen were then elected Honorary Members of the Society, viz:—

HENRY FOX TALBOT, ESQ., F.R.S.

SIR JOHN LUBBOCK, Vice-President of the Royal Society of London.

THE RIGHT HONOURABLE LORD GREENOCK, Vice-President R.S.E.

Sir David Brewster exhibited farther specimens of Mr Fox Talbot's Calotype, or Photographic Pictures. He stated, that the Paper which Mr Talbot now uses is so very sensitive that an exposure of 10 seconds in the Camera is sufficient to produce a Picture, and, as the process has been made public by Mr Talbot himself, he was now at liberty to explain it to the Society. It is as follows:—

Select good writing paper, having the water-mark Mr Talbot recommends—*J. Whatman, Turkey Mill*,—use only the half-sheet free from the water-mark,—having marked one side of it, wash it over with a solution of nitrate of silver, 100 grains of the crystals dissolved in 6 ounces of distilled water,—let the paper dry in a dark room, or at a distant fire,—then immerse it, for two minutes, in a solution of iodide of potassium, 50 grains to 2 ounces of water,—this converts the nitrate into iodide of silver. The paper is then to be dipped in water, dried with blotting paper, and at the fire; it is hardly sensitive to light, but, to avoid risk, should be always kept in a portfolio.—This is the first part of the process.

Make a saturated solution of crystallized gallic acid in distilled water, (cold.) Make another solution of crystallized nitrate of silver in distilled water, 100 grains of the nitrate to 2 ounces of water,—to which solution add one-sixth of its bulk of very strong acetic acid. Mix these two solutions in equal volumes, at the time you are going to use them,—mixing no more at once than is intended to be used in a quarter of an hour, for it speedily decomposes,—with the mixture wash the paper formerly prepared, on the marked side, with a soft camel's hair brush, and it immediately acquires the sensibility described. This process should be done by candle light.

If a portion of the paper so prepared is exposed to daylight, for a second or two, it speedily darkens, the part not exposed remaining white,—if gently heated after exposure, it darkens more speedily,—if again washed with the mixture, after exposure, and then heated, the part exposed darkens

much more speedily and perfectly than before, the rest of the paper still remaining white.

If paper so prepared is placed, while damp, in the focus of a camera, and allowed to remain from ten seconds to several minutes, according to the degree of light, a strong image is obtained.—If the time is short, the paper may come out blank, but, when gently warmed at a fire, the image appears. If not sufficiently bright, it should be washed over with the mixture, and gently heated,—it will then come out more strongly.

To fix the picture, wash it with a solution of bromide of potassium, 100 grains to half a pint of water,—and then with water; as a substitute for this, it may be dipped in a strong solution of common salt.

The picture obtained by the above process is styled by Mr Talbot, *negative*—the lights of the picture being dark, and the shadows light; a *positive* impression, however, can be obtained, by placing prepared paper behind it, instead of using the camera—exposing to light—and proceeding as before.

Sir David Brewster also stated that Mr Talbot had discovered another process for at once obtaining a positive picture. The paper for this purpose is not so delicate as the other, but the effect is excellent—being equal to a fine line engraving. The process, however, is only in progress to perfection, and has not yet been made public.

Mr Connell gave an account of his chemical examination of an American Mineral, to which the name of Sillimanite was given, some years ago, by an American Chemist, Mr Bower, in honour of Professor Silliman. Mr Bower found this Mineral to consist of Silica, 42.66—Alumina, 51.11—Oxide of Iron, 1.99. More lately, Dr Thomson published an analysis of it by one of his pupils, Mr Thomas Muir, according to which it contained Silica, 38.67—Alumina, 35.10—Zirconia, 18.51—Oxide of Iron, 7.21. Mr Connell, having lately procured some small specimens of

the Mineral, through the kindness of Mr Rose of Edinburgh, proceeded to examine them, with the view of ascertaining whether they really contained Zirconia, which does not appear in Mr Bower's analysis; but, after a careful examination Mr Connell was unable to detect any of that rare earth. He found in it—Silica, 36.75—Alumina, 58.94—Oxide of Iron, 0.99. From its chemical composition, as well as from the angles of its crystals, Mr Haidinger's opinion appears to be well founded, that it is a variety of Disthene or Kyanite.

APPENDIX 4

Local Poets Corner

Dr John Adamson

Died 12th August, 1870

1. More stilly-solemn breathes the evening gale,
   More sadly-plaintive moans the rippling surge,
   Bearing afar the people's sorrowing wail,
   And the long echoes of the funeral dinge.

2. For he is gone who loved the varying sound
   of nature's harmonies, by sea and shore;
   Who read each page Creation spread around,
   and gathered knowledge from its hidden store.

3. Wise where the noblest sons of science meet,
   and high in honour mid the world renowned,
   yet still the poor man's friend, his willing feet
   where helpless suffering lay, were ever found.

4. Trusted and true as a well tested blade,
   and prompt where sudden danger might appal,
   Tender as woman in a sufferer's aid,
   Yet brave as mail-armed knight at duty's call.

5. His gentle touch allayed the pounding throb
of fevered pulse; or when the spoiler came,
His grave yet cheering tones off soothed the sob,
That burst unbidden from the anguished frame.

6. And when these tidings have been wafted wide,
A note of sympathy shall homeward roll, -
From far Vancouver's Land to Gangers tide,
From Honolulu, to the Northern Pole.

7. For grief will fill the Indian bungalow,
In many a far-off sea and distant shore
will memory oft recall the form laid low,
the kindly smile we ne'er shall welcome more.

8. God guard the orphans! bear the widow's part!
No stranger's hand may touch that reverent pall!
We leave him in repose - no nobler heart
Rest 'neath the shade of the Cathedral wall.

J.W.S.

Published in St. Andrews Gazette, 27th August, 1870

Plates 1 - 37

Although several of the plates in this section illustrate specific points in the text, others have been chosen purely as examples of the breadth of Adamson's work and for no other reason. Where the portrait is of specific historical importance, a short biography is provided of the individual depicted.

The prints have been either sepia or selenium toned both for permanence and to give some idea of the range of colours of the original prints,(although no attempt has been made to match specific colours to specific prints)

Unless stated otherwise, all prints have been copied from albums in possession of the University of St Andrews Muniments Department.

Plate 1

John Adamson
Dr Harry Goodsir
C 1842
Calotype
90 x 90mm
Album 6/90

One of Adamson's earliest portraits, now severely faded. It is of interest however for two reasons - it dates from the earliest days of calotype portraiture and it depicts a figure from a historically important event. Harry Goodsir was a native of Anstruther and, like Adamson, was a physician and naturalist. In this capacity he was engaged to sail with Sir John Franklin (1786 - 1847) in search of the North - West passage. The expedition set sail in 1845 on two ships, the EREBUS and the TERROR with a compliment of 129 men. In the summer of 1846 the ships were trapped by ice near King William Island and over the next two years the entire expedition party was to perish in attempts to march across the ice. Several expeditions were despatched and various remains were discovered.

Ironically, in 1984, a sailor's body was found almost perfectly preserved in the ice and photographed providing a surely unique occurrence - two portraits from an expedition separated in time by over 140 years!

See also,
Graham Smith " Dr Harry Goodsir, by Dr. Adamson of St Andrews"
History of Photography Vol. 10 No.3 1986 pp229-236

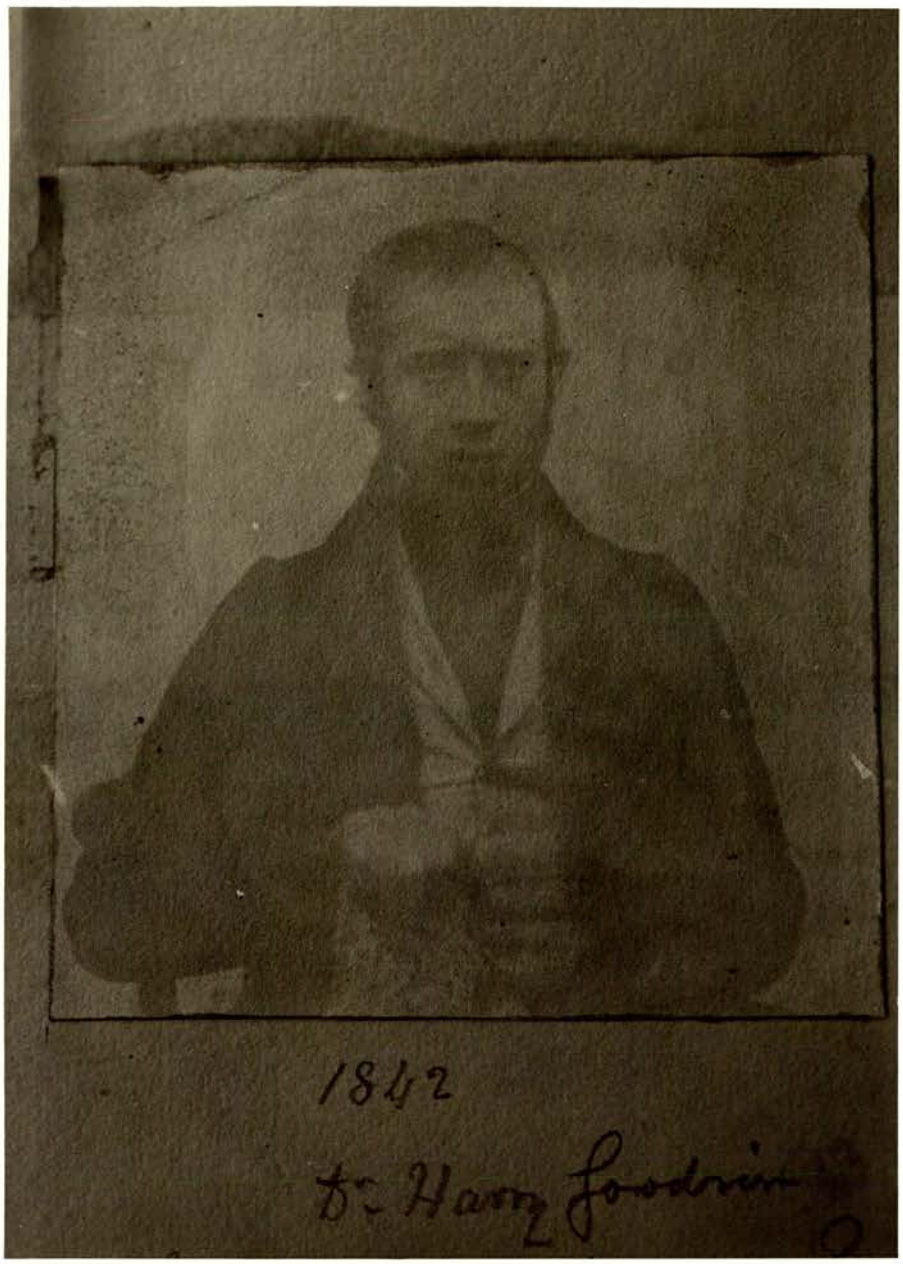


Plate 1

Plate 2

John Adamson

St.Andrews Castle Gate

Calotype

Album 8/86 & 87

Well detailed image of the castle gate with figures. Both positive and negative images are mounted along with a sample of Fox Talbot's iodised paper. The negative is marked 1843 and annotated in the album as;

" negative by Fox Talbot's process, taken in 1843."

Plate 2

Plate 3

Robert Adamson ?

D.O. Hill

1843-47

Calotype

155 x 205mm

Album 8/95

This is one of several old calotypes pasted in at the back of the album. Although the image itself is now rather faded and decayed, the composition remains strong and confident and Hill has such a "modern" face that this early example of portraiture á la calotype, transcends the decades without looking archaic.

This portrait also appears in a group of calotypes of Hill in Sara Stevenson's ,

David Octavius Hill & Robert Adamson

Catalogue Of Their Calotypes

Edinburgh 1981

p72 (n)

Plate 3

Plate 4

John Adamson

South St. St Andrews

1842

Calotype

200 x 150mm

Album 5/5

An early calotype of South Street. The figures are quite distinct and complete - not the usual dark smudge or ghost image and one wonders if Adamson had asked the figures to pose, rather pre-empting D.O. Hill's stage managed tableaux of Fishergate, North Street of the following year.

The Holy Trinity clock reads 12.55 - the brightest part of the day with the sun directly overhead. The shop is W.Smith, Chemist and Druggist. A close-up by John or Robert(N.G.S. Queen St. Edin. PGP EPS 81) shows that one window says "Patent Medicine and Perfumery" and the other,"William Smith, Chemist and Druggist.

Plate 4

Plate 5

John Adamson
Adamson's Dog, Blanche
1850's
Collodion
185 x 130mm
Album 8/24

This is portrait of Adamson's pet taken from an unusually low viewpoint. Blanche also features in the portrait of Adamson's house in South Street (Pl. 22) and may well be the subject of Adamson's paper Case of Lactation in an Unimpregnated Bitch read to the British Association meeting in Aberdeen in 1859.

Dogs, with or without their owners, had been a popular subject for the camera from the Daguerreotype onwards and were frequently the subject of Carte de Visite portraits from the 1860's.

The subject of the dog in photography from the 1840's to the 1880's is dealt with in,

Une Scheid Dogs in Focus
Weingarten 1989

See also,
Graham Smith, "Maida & Blanche: Talbot Scott and John Adamson" Scottish Photography Bulletin No. 1 (1991) pp3-6

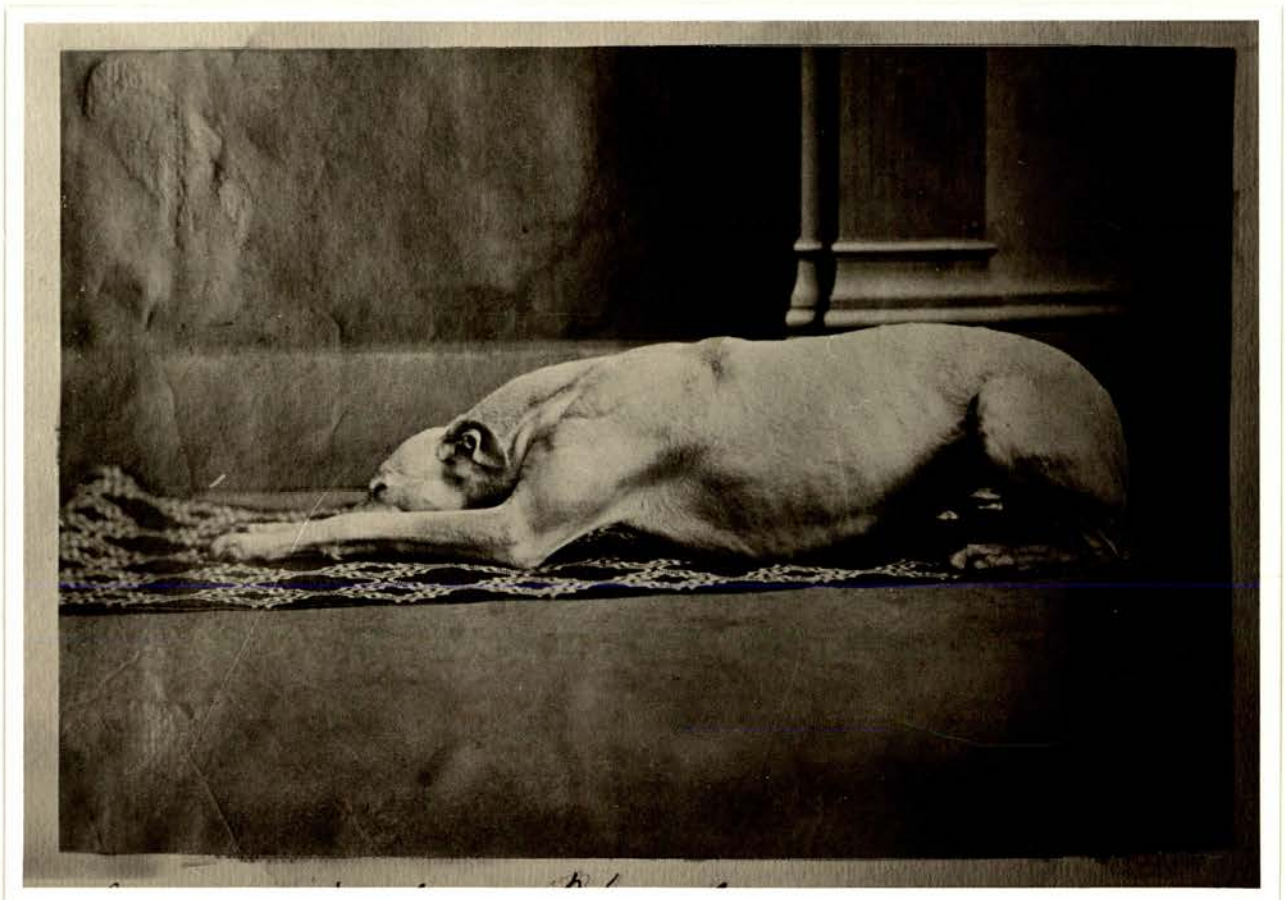


Plate 5

Plate 6

John Adamson

Tyrolese Street Players

1864

Collodion

200 x 165mm

Album 8/75

An interesting outdoor study of a group of itinerant musicians. The large aperture used has so effectively isolated the figures from the background that the image seems almost three dimensional.

The costumes are well resolved and contain considerable detail. The players themselves look rather apprehensive, suggesting that they were not entirely comfortable about being photographed. Smiling of course was not a property concomitant with Victorian portraiture, even when shorter exposure times allowed a degree of facial relaxation.

Plate 6

Plate 7

John Adamson

Stereoscopic Self Portrait

c 1849

Calotype

160 x 90mm

Album 8/88

These are probably the portraits Brewster alluded to in his History of the Stereoscope when he states that,

"Dr Adamson of St.Andrews at my request, executed two binocular photographs of himself which were generally circulated and greatly admired." (p 29)

See also,

Nicholas Wade, Brewster & Wheatstone on Vision

London 1983 pp38-39

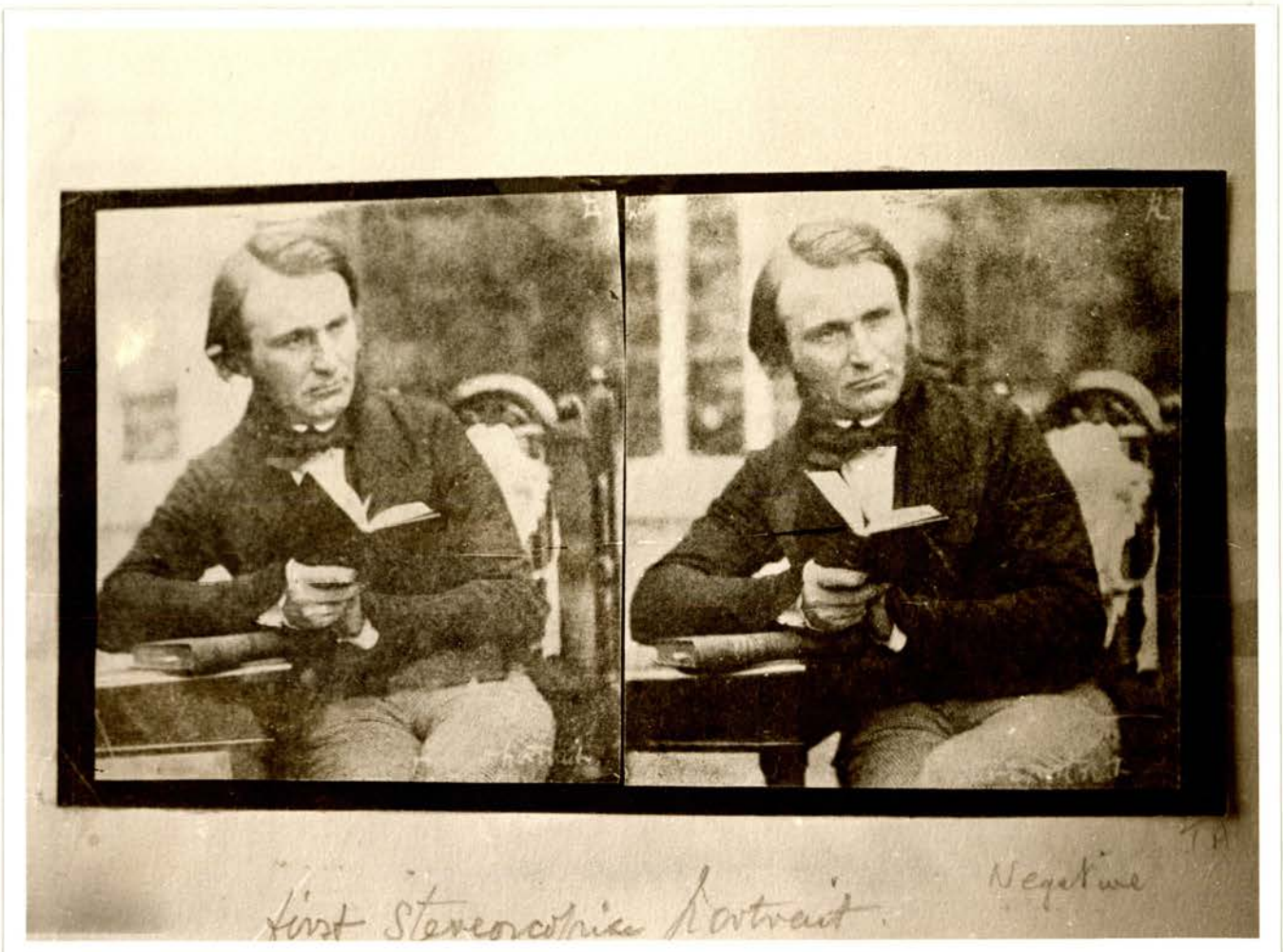


Plate 7

Plate 8

John Adamson

Professor Macdonald

Collodion

160 x 195mm

Album 8/25

A face so full of character as Macdonald's would be a gift to any photographer and Adamson in his portrait has wisely elected to have no props which would detract from the face.

William Macdonald was Professor of Civil and Natural History at St Andrews from 1850 until his death in 1875. His tenure of the chair was not without controversy. It is reported that Macdonald was "credited with one class in Civil History and six classes in Natural History during his twenty five years in the chair" (Matriculation Roll of St Andrews University Anderson pxxxiii) Apart from this, he also was reputed to live most of the time in Edinburgh. Brewster was keen to rid the university of ineffectual professors and an opening address by him, (reported by Douglas Govan) alleges that,

"Too often has the professorial chair in Scotland been made the pillow whereon the sloth may repose, or the couch upon which ignorance may recline ..." Not surprisingly, according to Govan, Macdonald was one of those whom Brewster was anxious to be rid of. In the event of course, Brewster left and Macdonald stayed.

(Govan's hand-written comments are to be found on the inside cover of The Home Life of Sir David Brewster by M M Gordon held by the Hay - Fleming Reference Library in St Andrews.)

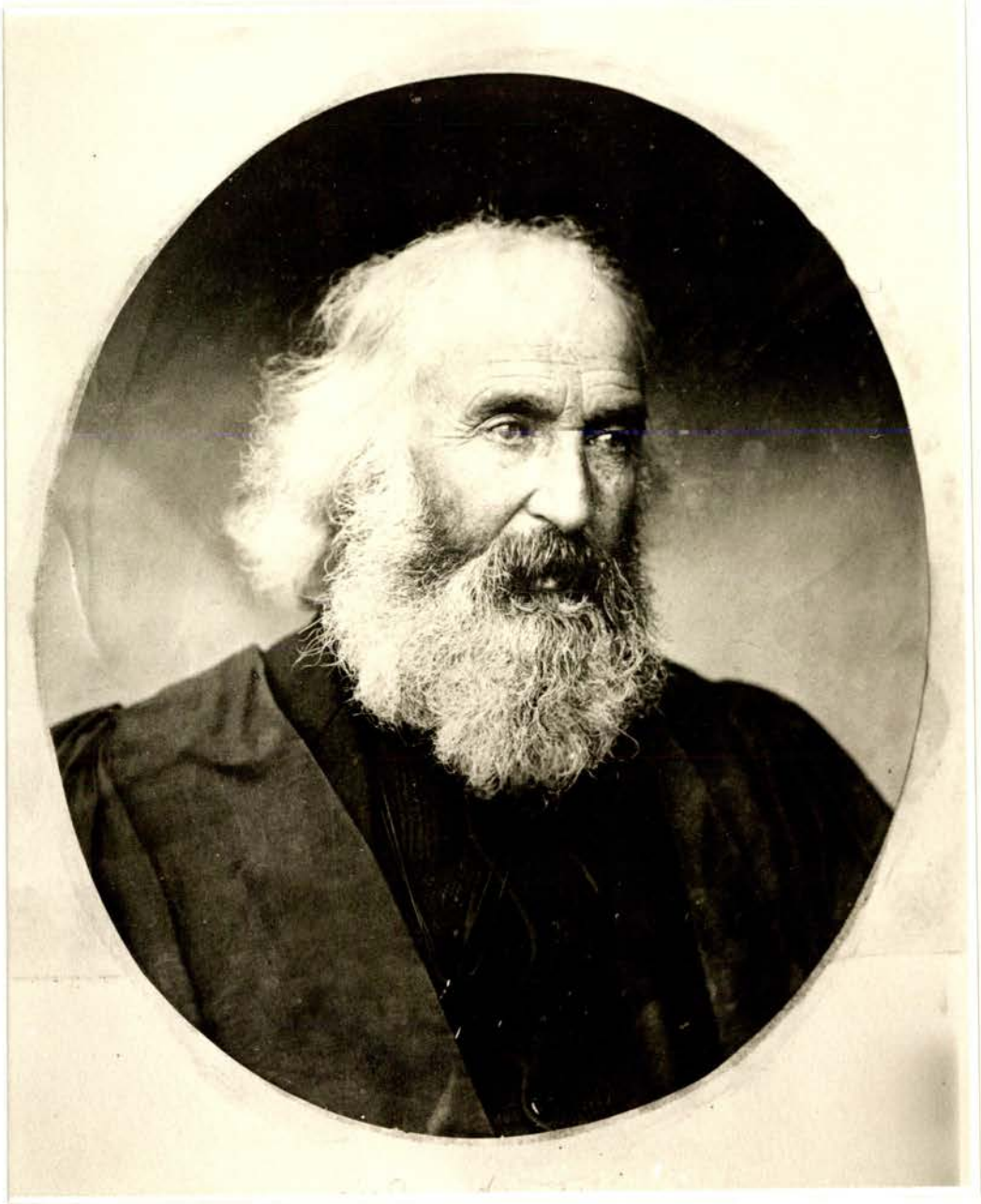


Plate 8

Plate 9

John Adamson
View at Burnside
1842-43
95 x 83mm
Brewster Album (Getty Museum) 19/63

It is unfortunate that no other provenanced images of Furlong are known at present, but he is allegedly pictured in this early view at Burnside Farm. (See text p68).

See also,
Graham Smith Disciples of Light
J. Paul Getty Museum Malibu 1990 p67

A.D. Morrison-Low "Sir David Brewster and Photography"
Review of Scottish Culture No. 4 1988 p71

Plate 9

Plate 10 & 10a

Plate 10 shows Burnside Farm as it is to-day. Although the exterior has been recently harled it remains very much as it would have been in Adamson's time. The path leading down the right of the house follows the garden wall down to the Kenly burn where the original bridge(plate 9) stood and where its replacement,plate 10a, now stands.

Plates 10 & 10a

Plate 11

John Adamson

Dr. William Playfair

1855

Collodion

155 x 200mm

Album 8/21

Portrait of another of the Playfair dynasty, Dr. William Playfair. Well resolved print showing excellent texture on trousers and jacket and the elaborate necktie. Note also the early stethoscope on the table.

Plate 11

Plate 12

John Adamson

Naval Officer with Telescope

Collodion

180 x 200mm

Album 8/35

This is a simple but effective portrait of a young naval officer. The profile introduces an enigmatic element into the picture - what is the young man looking at?, a distant horizon perhaps, or his future career?

Although he appears a trifle young for the rank he seems to have a boatswain's whistle on a cord at his waistcoat but, although the telescope may just be a prop, it seems more likely that he may have been in the Navigating Branch as a Master's Assistant which , in 1867, became known as a Navigating Midshipman.The absence of a firm date for the picture makes it difficult to be emphatic.

The name Smith is written in pencil under the image but it has not proved possible to identify him, as yet, from the Navy List.

Plate 12

Plate 13

John Adamson
Professor Syme
1865
Collodion
170 x 220mm
Album 8/43

James Syme was one of the foremost surgeons of his age. Descriptions of him at work describe his method as,

" . . . no show, little elegance, but absolute certainty, ease and determination." (Edinburgh Hospital reports 1893 Vol.I)

Adamson's frank, frontal portrait somehow seems to embody these qualities. It is certainly a face of considerable character and interest.

Syme's career was also an interesting one. Described by Alexander Miles as the "Napoleon of Surgery" Syme, like Adamson, was considerably interested in chemistry. At the age of 18, he and some colleagues from Dr. Hope's class (also one of Adamson's tutors) started a Chemical Society and in this class Syme discovered that a distillate of coal-tar would produce a form of naptha which acted as a solvent for rubber and which could impregnate and waterproof cloth. This was published in 1818 in Annals of Philosophy Vol.XII but it was Charles Mackintosh(1766-1843) who patented the method in 1823 and whose name became synonomous with the rainncoat.

Syme became Professor of Clinical Surgery in 1833 and held this post at the Royal Infirmary for thirty six years, radically altering the practise and teaching of surgery.

Plate 13

Plate 14

John Adamson
Dr Guthrie
Collodion
170 x 195mm
Album 8/63

Thomas Guthrie (1803-1873) was born in Brechin, Angus and after being educated in Edinburgh he became minister of Greyfriars in 1837 and St John's in1840. He appears in several Hill and Adamson calotypes and was a leading figure in the Disruption of 1843 which resulted in the establishment of the Free Church of Scotland. He was instrumental in founding the so called "ragged schools" which provided education for the children of the poor as well as several other social reform schemes.

Adamson, as usual, has selected a pose which seems to convey some of the essential character of his sitter. The spread arms seem to suggest openess and approachability and there is a hint of humour about the eyes and a slight smile around the mouth. His finger seems to be marking a passage in the book which suggests he had actually been reading it rather than just being handed it as a prop. Again, Adamson has his plane of focus accurately centred on the eyes, the tassels on the table cover demonstrate clearly the increasing resolution as this critical area is reached.

Plate 14

Plate 15

John Adamson

John Hanning Speke

170 x 220mm

Collodion

Album 8/54

The source of the Nile had intrigued the imagination for centuries and in 1857 Richard Burton and John Hanning Speke backed by the Royal Geographic Society set out to find it. Sickness and bad feeling between the two beleaguered the expedition however they became the first Europeans to set eyes on Lake Tanganyka. Six months later, travelling alone, Speke discovered an enormous expanse of water which he named Lake Victoria. Speke instinctively felt that this was the true source of the Nile. A second expedition (with James Augustus Grant) in 1862 confirmed Speke's intuition and they accordingly cabled the society claiming that they had discovered the Nile's true origin. (Indeed they had found a major source but later exploration was to prove that the Nile had many sources.)

This is a fine study by Adamson of the archetypal Victorian explorer. The catchlights in the eyes lead the viewer straight to them and it is difficult not to speculate as to what wonders and sights these eyes must have seen.

It seems probable that Adamson photographed Speke when he was in St.Andrews to see Blackwood, his publisher. Although the Blackwood magazine Speke's holding (DLXXVI Oct.63) has nothing of relevance to him in it Speke had several extracts of his journals published in the magazine between 1859 and 1864. Later on in the year in which Adamson photographed him, Speke, ironically after surviving the perils of the African interior, died in a shooting accident in England.

His obituary, also published in Blackwood (No.DLXXXVIII Vol.XCVI Oct.1864) rather optimistically stated that,

"It is the remaining consolation of his friends, that no man of the age is safer from immortality. He who achieved what mankind had been struggling after for 3,000 years is sure to be remembered as long as the earth exists and is inhabited"

Plate 15

Plate 16

John Adamson

Countess Dudley with Stereoscpe

1850's

150 x 200mm

Album 8/28

Another of Adamson's "society" images but of interest especially because she has a lenticular stereoscope on the table, a slightly more sophisticated one than that described by Brewster in his HISTORY OF THE STEREOSCOPE (P66 & 67).

Plate 16

Plate 17

Hugh Lyon Playfair

Playfair's Theatre

1856

Collodion ?

Album 6/83

This may well be the image referred to in the Literary and Philosophical Society minute of 29/11/1856.

> "Sir Hugh Lyon Playfair handed round some photographs containing a great number of portraits in a very small space, yet properly distinct".

Plate 17

Plate 18

John Adamson

Adamson's Sister Melville and Nephew Alexander Bell.

c 1860

Collodion

175 x 195mm

Album 8/65

This is another of Adamson's "Tableaux Vivant" shots and depicts his sister Melville inspecting her nephew Alexander's catch. Alexander was the son of his sister Isabella and his partner, Oswald Bell. As well as being Adamson's brother-in-law and neighbour (when they moved to the Scores in 1865), Bell remained Adamson's neighbour in death since they are buried next to each other in the cathedral cemetery.

The exposure clearly was not quite brief enough to arrest the motion of the cat which apparently was not content to be "sat on the mat."

In the Edinburgh Album, 1942 1:1 225, this image is entitled "Home from the Burn"

See Also,

Graham Smith " A St. Andrews Ghost Story "

History of Photography 14 (1990) p76

Plate 18

Plate 19

John Adamson
Adamson's Mother
1864
Collodion
180 x 240mm
Album 8/37

This is a splendid study of dignified old age. The subject is Adamson's mother Rachel aged 84. She lived until she was 91 outliving both John and Robert Adamson. The white collar and cap frame the face and isolate it from the dark dress and background.

Plate 19

Plate 20

John Adamson

Miss Ellen Murray (6 images)

140 x 180mm

Album 37

Adamson had been experimenting in going "beyond mere portraiture" (see text p104-5) and Miss Murray appears to have been one of his favourite models in this venture. The Edinburgh prints are dated 1855 and these may be from the same period although they look more like calotype than collodion images.

Plate 20

Plate 21

John Adamson

Professor John Couch Adams

1861

Collodion

150 x 200mm

Album 8/55

A simple but effective pose, ideally suited to the subject. Adams is clearly looking straight into the camera with the result that his eyes and the viewer's connect immediately forming a bond between viewer and viewed. In a time when phrenology was taken seriously the high intellectual forehead is also given prominence by the frontal pose.

In October 1845 Adams predicted mathematically the existence of an unknown planet and calculated its course in a paper lodged with the Astronomer Royal, Sir George Biddel Airy. In 1846 the French astronomer Urbain Leverrier came to a similar conclusion and in September 1846 Planet Neptune was finally observed by astronomers at the Berlin observatory. Equal honours were accorded to both men in 1848 by the Astronomical Society.

For a short period, April 1858 until January 1859, Adams was Professor of Mathematics at United College, St Andrews. In 1858 Adams was made the Lowendean Professor of Astronomy at Cambridge.

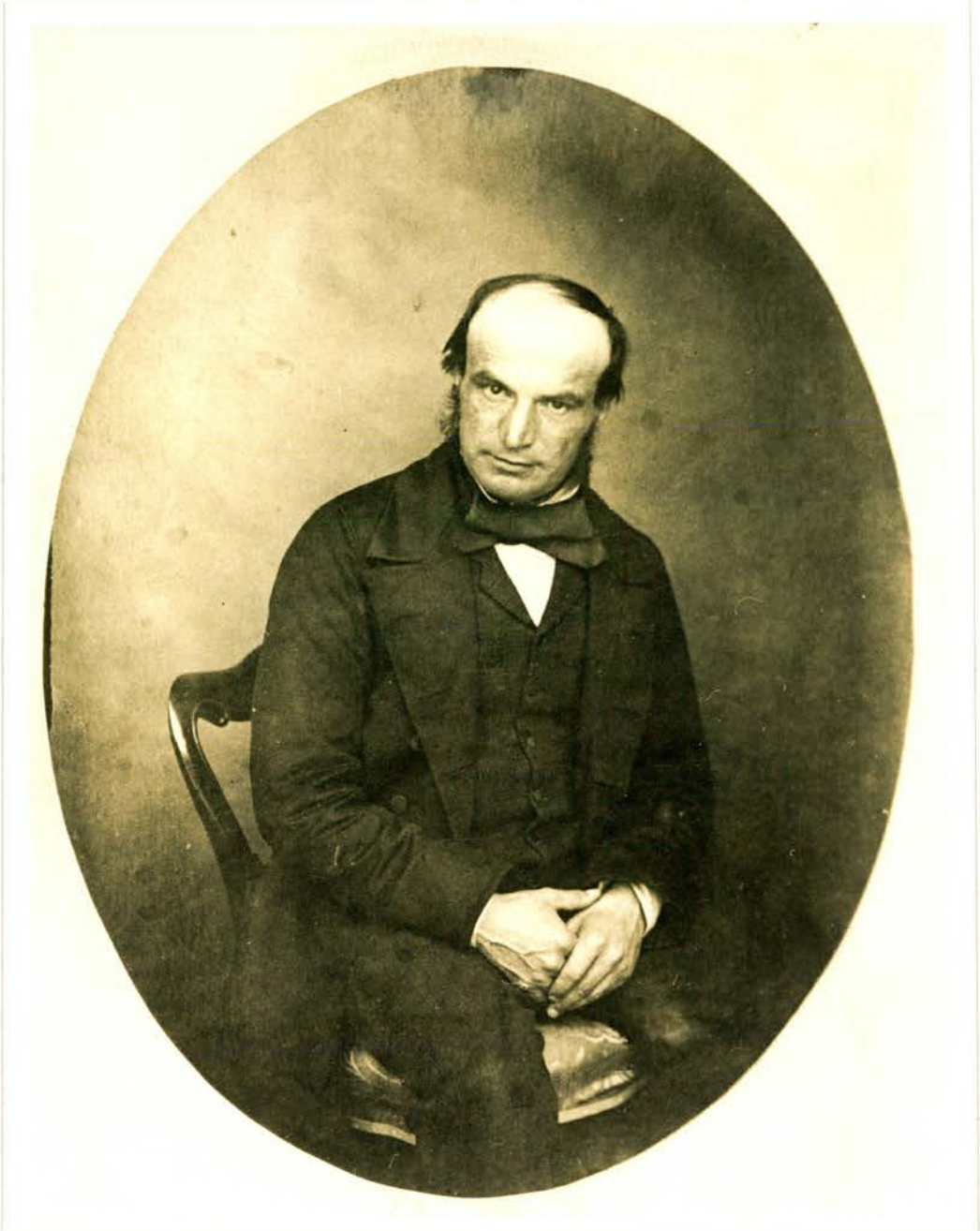


Plate 21

Plate 22

John Adamson
Adamson's House, South Street
1862
W.P.
220 x 170mm
Album 8/67

Now the town's main post-office, Adamson lived here until 1865 when he moved to the Scores. His wife is seen at the window with what appears to be a printing frame, with the cat in the opposite corner, and his dog Blanche is lying on the pavement. (See also plate 23).

See Also,
Graham Smith " Maida and Blanche:Talbot, Scott and John Adamson"
Scottish Photography Bulletin No.1 (1991) pp3-6

Graham Smith " A St. Andrews Ghost Story "
History of Photography 14 (1990) p76

Plate 22

Plate 23

This image is shown in D.B. Thomas, The Science Museum Photography Collection London 1969 p57 to demonstrate a wooden calotype printing frame, (Cat. No.381). It shows the wife of Welsh photographer John Llewellyn* checking the progress of a print in the frame.

It is shown here as a comparison with plate 22 which shows Adamson's wife, Rachael, with a similar device in the corner of the window.

* Identified as such by John Hannavy in,
Fox Talbot Aylesbury 1987 p14 (Original print in private collection

Plate 23

Plate 24

John Adamson
Lady with a Crucifix
C1862
Collodion
155 x 200mm
Album 8/31

Possibly the same woman in Lady with Veil (plate 25). Although not identified in this album she is named as Miss Godfrey in a similar print in N.M.S. Chambers St. Edin. (1942 1:1 217)

A rather contrived composition but as a study in contemplation it works tolerably well. Depth of field is shallow, being confined to a narrow band up the middle of the figure but Adamson has held all the important features of the composition, the face, hands and crucifix within this crucial area. Also particularly well resolved are the fingernails and lace cuff of the right hand, and the material over the right breast.

In the Edinburgh Album (R.S.M. Chambers St.), 1942 1:1 223, this image is accompanied by some of Adamson's poetry,

" A penitent so fair,
Did sorrows over hearts undone,
E'er cloud her brow with care"

Plate 24

John Adamson

Lady with a Veil

C 1862

Collodion

155 x 200mm

Album 8/30

Possibly the same Miss Godfrey as plate 24. Certainly the ear-rings and long fingers are similar although the distinctive wedding ring is hidden in the other plate.

This portrait seems very much an exercise in pattern and texture, especially the delicacy of the embroidered lace of the shawl and the veiled ostrich feather hat.

Plate 25

Plate 26

John Adamson

Miss Wilhelmina Carstairs

c 1863

Collodion

135 x 185mm

Album 8/67

One of the fascinating things about Adamson's portaits is that although they are highly proficient both aesthetically and technically they often have a historical significance which gives them a further dimension.

This portrait of Wilhelmina Carstairs is a fine piece of work in its own right, the face is well modelled and the highlights on the hair separate it from the velvet black background.

Historically, it is of interest for another reason. Jane Carstairs, wife of a doctor in Cupar, Fife had gone to Edinburgh in expectation of a difficult birth having lost her first child in a traumatic labour. James Y. Simpson was the obstetrician in the case and the imminent birth coincided with Simpson's desire to try chloroform on an obstetric case.

Consequently, on the 9th Nov. 1847 Wilhelmina Carstairs became the first baby to be born with the aid of chloroform. Adamson sent this photograph of Wilhelmina aged 17 to Simpson who kept it by his desk. Because of the rather pious expression he light-heartedly christened the portrait 'St.Anaesthesia.'

N.B. This picture was exhibitedin 1976 at an exhibition in the Royal Scottish Museum Edinburgh to mark the 250th Anniversary of the Faculty of Medicine at Edinburgh university.

See the Commemorative Catalogue compiled by,

R.G.W. Anderson & A.D C. Simpson

Edinburgh and Medicine

Royal Scottish Museum Edinburgh 1976 p50 No.332

Plate 26 Cont.

See also

Myrtle Simpson Simpson the Obstetrician

London 1976 esp. pp 131-132

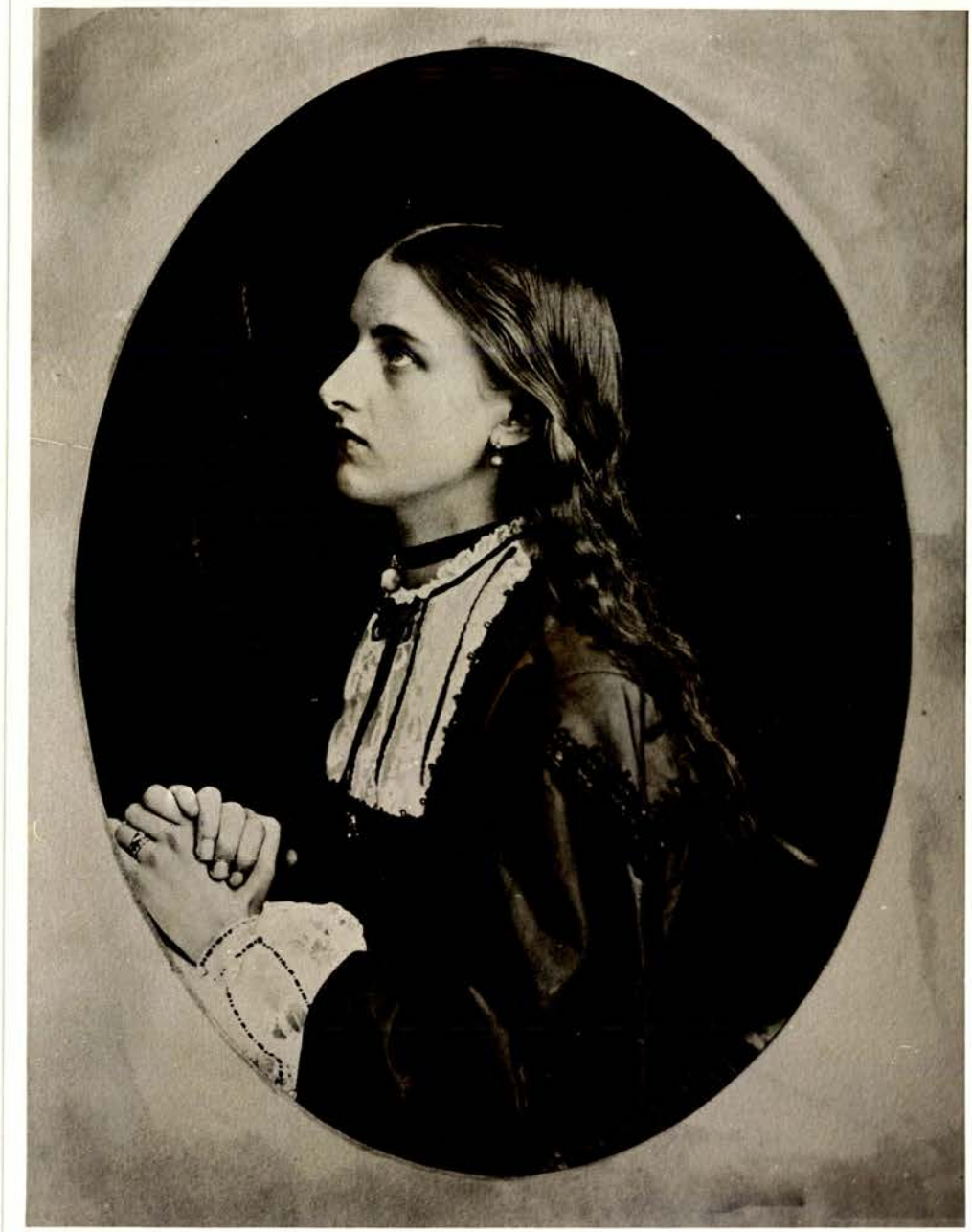


Plate 26

Plate 27

John Adamson
Potato Head
150 x 110mm
Vol. 6/158

It is tempting to regard this image as a critique of the failing of mass portraiture but on a more pragmatic level it does rather suggest that Adamson had quite a sense of humour which posits a different side of him to the serious doctor and town father which we are more accustomed to.

Plate 27

Plate 28 & 28a

John Adamson

Skeletons Sunfish

170 x 125mm

Album 8/91

John and/or Robert photographed selections from the museum's collection at several times. Whether or not a complete photographic survey was attempted is not known. If it was, very few images have come down to us. Although Robert's arrangements of material were rather ad hoc (eg. fox and gannet), this group of skeletons by John seems to be an attempt to picture representatives from the four classes of vertebrates, Aves, Mammalia, Pisces and Reptilia.

The collection remained substantially complete under the Literary and Philosophical Society auspisces until 1904 when the University Court took over responsibility for the collection. In 1912 it was moved from Upper College Hall (St.Salvator's) to its present home in the Bute Medical Building. Now the Bell Pettegrew Museum, it is mostly a zoological collection, the majority of the other exhibits having gone to the Royal Scottish Museum, Edinburgh.

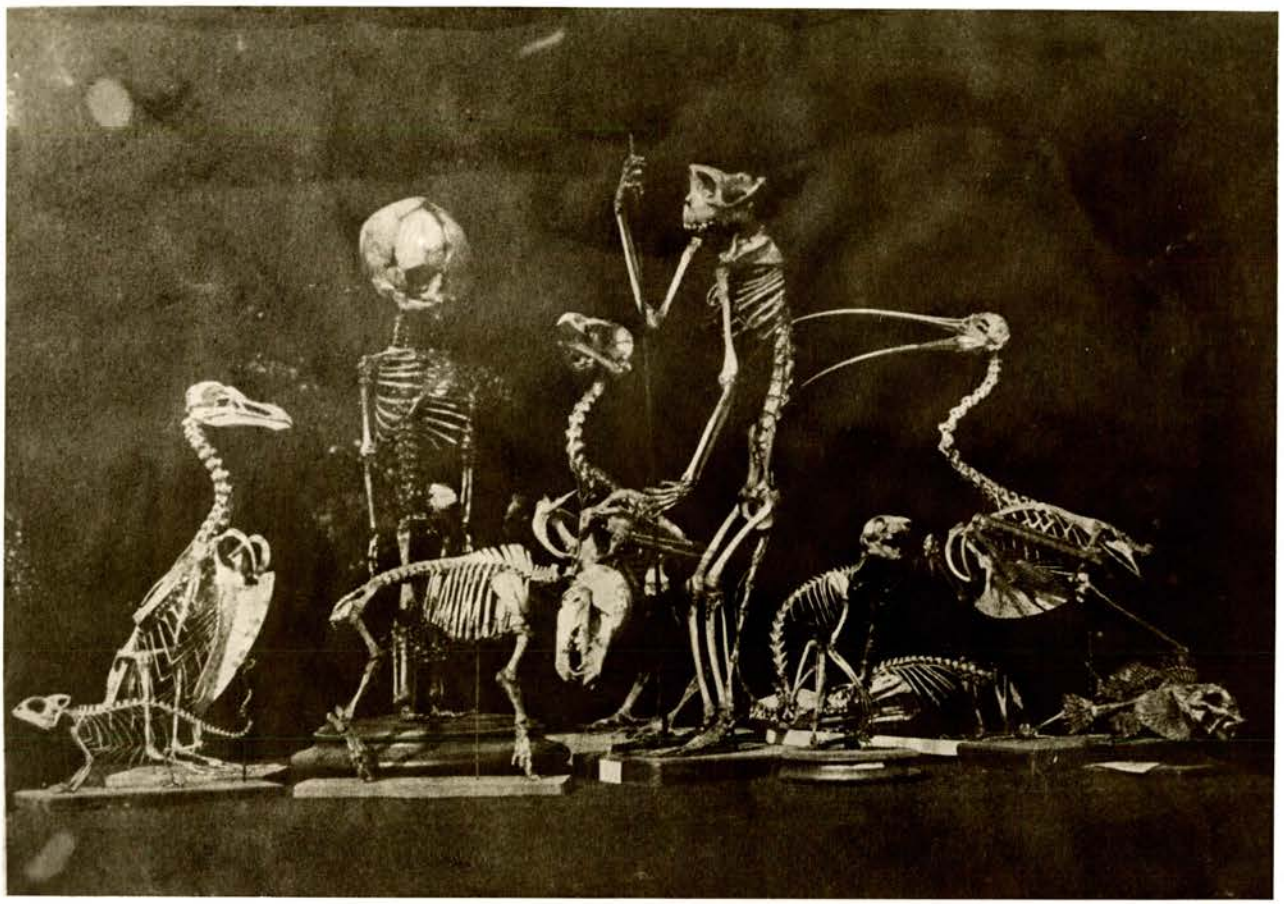


Plate 28

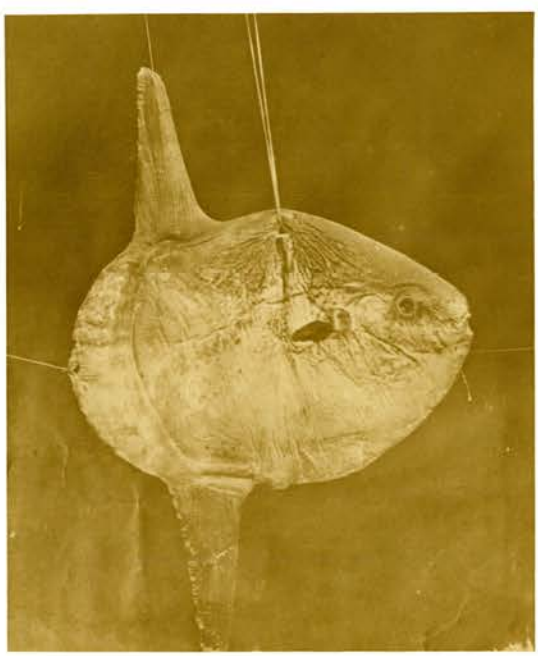


Plate 28A

Plate 29

Thomas Rodger
Louis Kossuth (1802-94)
1862
Collodion
128 x 171mm
Laurence Swan Thomson Vol. 1/52

Architect of the Hungarian revolution, Kossuth opposed Hapsburg rule but was forced to leave Hungary when Arthur Gorgei, one of his former ministers, became dictator. Kossuth was resident in Britain from 1852 to 1859 and known to be in Edinburgh in 1856, (See text P113) and it is probably from this period that the print dates although it is annotated 1862 when Kossuth was back on the continent.

This portrait also demonstrates how similar Rodger and Adamson's portrait technique was and how it is difficult to tell disputed prints apart.

Plate 29

Plate 30

John Adamson ?

Chemistry Class

1851

200 x 175mm

Album 9

A nice group of Adamson and his chemistry class with John himself posing rather nonchalantly at the right hand side.

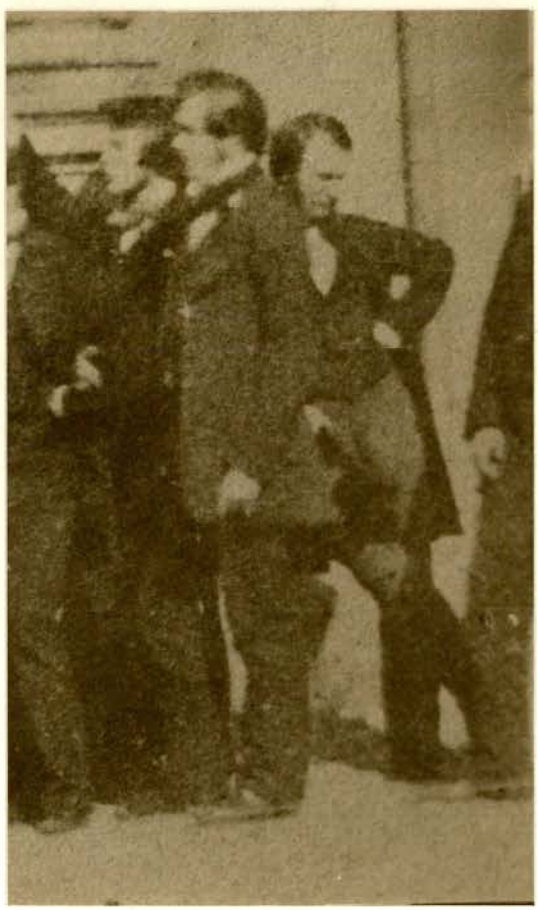


Plate 30

Plate 31

John Adamson

Lyon Playfair (1819-1898)

1855

Collodion

175 x 210mm

Album 8/95

Lyon Playfair was the Grand-son of James Playfair and Margaret Lyon, and son of George Playfair, a brother of Hugh Lyon Playfair.

He studied at St.Andrews in 1831-32 (aged 12) before going on to London, Glasgow and Giessen universities. As well as being a Liberal M.P. and in 1873, Post-Master General, Playfair was also Professor of Chemistry at Edinburgh from 1858-1868 and it is as a chemist that Adamson has chosen to portray him. Playfair was knighted in 1883 and created 1st. Baron Playfair in 1892.

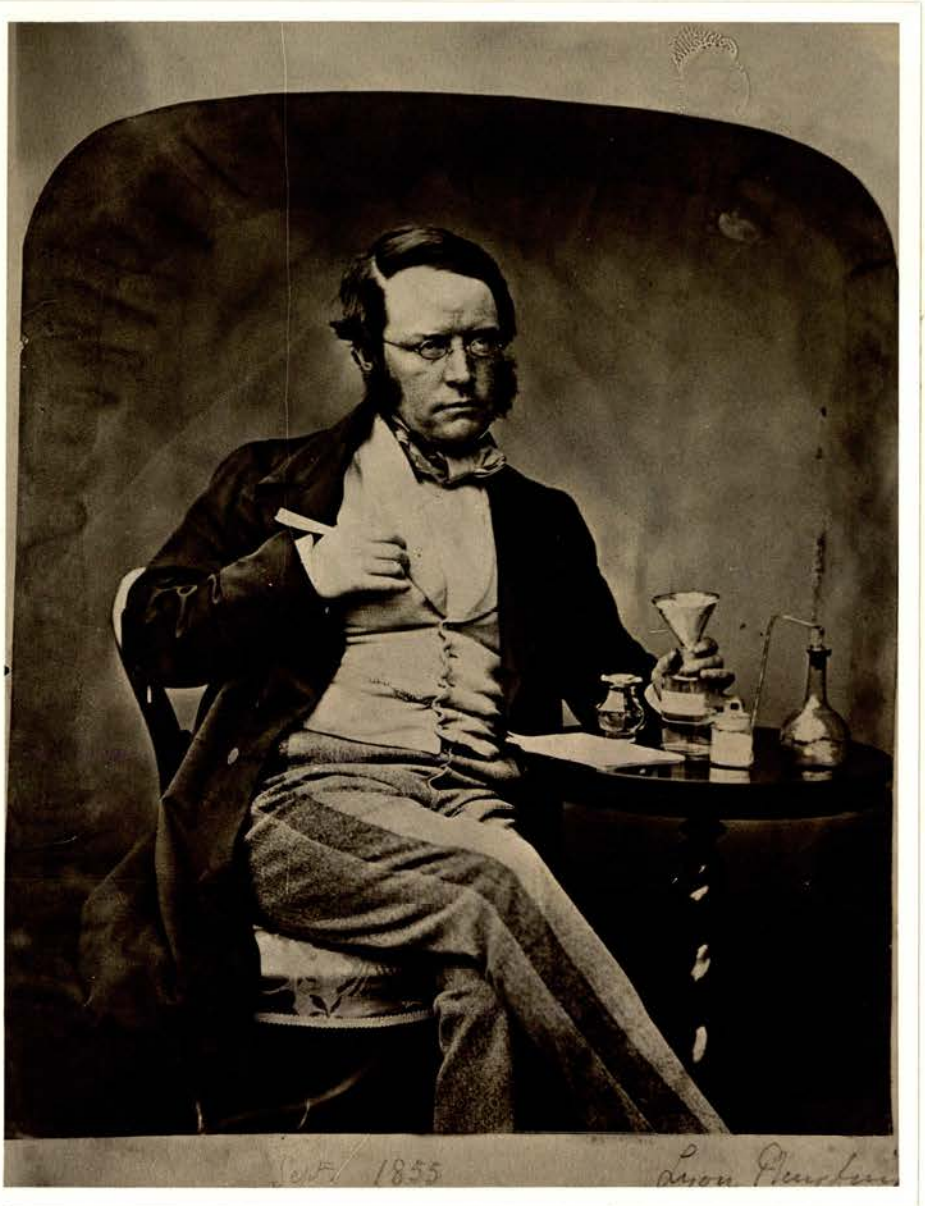


Plate 31

Plate 32

John Adamson

Prof. James Y. Simpson

1860's

Collodion

180 x 215mm

Laurence Swan Thomson Album Vol. 1/33

If Syme (Plate 13) was the "Napoleon of surgery" then James Young Simpson was certainly the "Wellington of obstetrics"

Simpson was a direct contemporary of Adamson at Edinburgh, both obtaining their Licentiateship of the Royal College of Surgeons at the same time. Simpson was a high achiever, taking his M.D. in 1832, more than 10 years before Adamson. Although best remembered for his experiments in anaesthesia he was really the founded of modern gynaecology.

Simpson is the subject of three calotypes by Hill and Adamson and appears in several Thomas Rodger and John Adamson pictures, either by himself or with the Literary and Philosophical Society.

Plate 32

Plate 33

John Adamson

Charles Kingsley

1864

Collodion

150 x 200mm

Laurence Swan Thomson Album Vol.I/134

This is a simple but effective three quarter view of author Charles Kingsley. The elbows out to the side create a good solid pyramid with lines converging on the face where the eyes are set on some distant point

Although this print is dated 1864, it is possible that it may have been taken later in 1867 when Kingsley was staying in St Andrews addressing a meeting of the British Association which was being held in Dundee. In a letter to his wife (7/9/1863) he writes of being invited to stay with the publisher Blackwood (who had Strathyrum House just outside St Andrews) and of the problems of the meeting,

"Nothing can be more pleasant than my stay here has been, but the racket of the meeting is terrible; the talking continual; and running into Dundee by two trains with the steamer at Broughty Ferry between is too much"

If the later date is correct, the thought of yet another trip to Dundee may well explain Kingsley's somewhat resolute expression in the portrait!

Plate 33

Plate 34

John Adamson
Miss Ferrier
Collodion
180 x 240mm
Album 8/29

Daughter of James Ferrier, a Professor of Moral Philosophy at United College St.Andrews. Miss Ferrier appears in several portraits by Adamson and this is a particularly attractive one. The pose is an unusually dynamic one for Adamson, the head and body facing in different directions creating an interesting tension with the hairline, bodice of the skirt creating a classical S shape rather reminiscent of International Gothic. The hands are also rather busy and there is a wealth of detail to explore in the costume. This particular picture shows that even after 25 years or so of photography, Adamson was still finding new avenues of portraiture to explore.

Plate 34

Plate 35

John Adamson

The Medical Examination

1862

Collodion

230 x180mm

Album 8/47

Rather an intriguing image - a posed group of university staff with Adamson on the left pretending to be a medical student being examined by his "tutors" As a study in light and shade however it has considerable merit. Some of the blacks are very rich and deep indeed but there is still considerable detail in both the faces and the shadow areas.

There is also something rather disconcerting in the way that Principal Tulloch stares out of the frame to confront the viewer rather than looking at Adamson like the rest of the group.

The picture also gives us a rare full profile view of Adamson and if we compare it with the profile of his sister Melville, (Plate 18), there certainly seems to be some argument in favour of a "family nose"

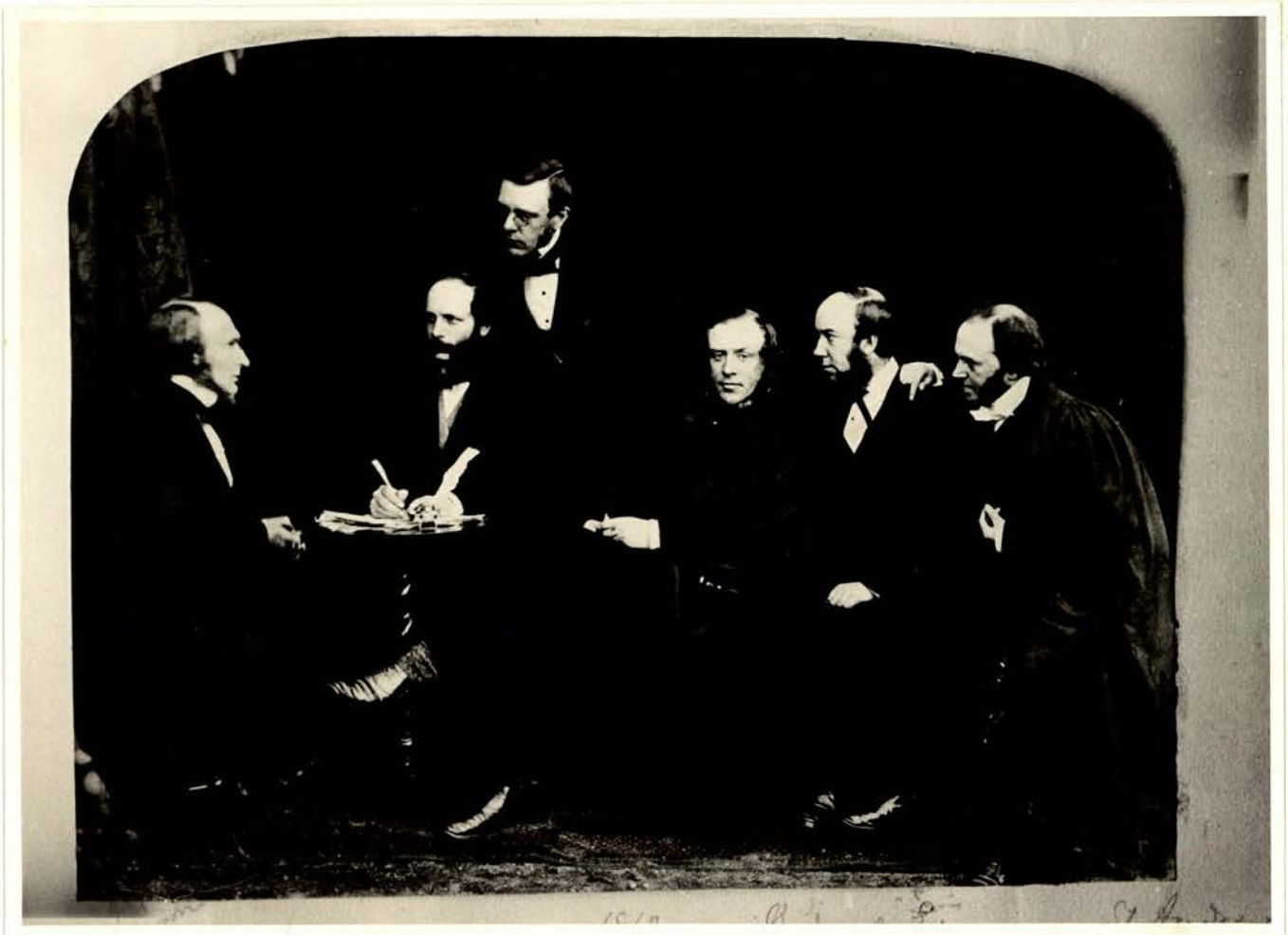


Plate 35

Plate 36

John Adamson
Elizabeth Garret Anderson
1862/63
Collodion
130 x 185mm
Album 8/40

Elizabeth Garret (later Mrs. Anderson) was one of the earliest campaigners for equal rights for women in medicine and the right to a university education.

Encouraged by Professor Day, (Professor of Medicine at United College St Andrews.)she matriculated in October 1862 and gained tickets to gain admission to classes in chemistry and anatomy but a majority of the senate, meeting in November, declared her tickets null and void. After taking her case to the Lord Advocate of Scotland it became apparent that only an act of parliament would allow women to pursue a university education. In retrospect, St Andrews did itself little credit by its narrow-minded attitude. It had the chance to be innovative and forward thinking but lost this opportunity. The attitude of the British Medical Journal (Nov.1862) was equally chauvinist,

"The female doctor question has received a blow instead of a lift at St Andrews University. It is indeed high time that this preposterous attempt on the part of one or two highly strong minded women to establish a race of feminine doctors should be exploded"

Anderson moved on to Edinburgh where she received some practical instruction under the auspices of James Y Simpson (plate 32). Her perseverance eventually was rewarded and she qualified as a Licentiate of Apothecaries Hall in 1865, going on to become the first female M.D. of the Sorbonne in Paris in 1870.

It is likely that Adamson's portrait dates from her

time in St Andrews (1862-63) and, knowing of her struggle, it is difficult not to attempt to "read out" meanings from the portrait - is her expression one of hope? disappointment? determination? The microscope is behind her; has she turned her back on science?

Again, whether by accident or design, Adamson seems to have captured an expression on the face of his sitter which invites considered speculation.

Plate 36

Plate 37

John Adamson

Tetty with Rabbit

1862

Collodion

170 x 190mm

This is a pleasant, informal portrait of Adamson's daughter, then aged 5. It is full of interesting materials, folds and textures but unfortunately the rather "busy" background detracts from the main subject. However, in fairness to Adamson, a five year old holding a rabbit which no doubt wants to be elsewhere would necessarily be a rather rushed shot.

Plate 37